Summer Math for Algebra II Honors

Please join our Google Classroom: Algebra II Honors 2023-2024 code: tc5ctme

There are some basic concepts and skills that you are expected to remember, understand, and be able to use prior to starting Algebra II Honors. We have a lot of ground to cover next year, and we need to start right in. There will not be time in the fall for me to reteach you whatever you may have forgotten from Algebra I. Therefore, your summer math assignment is to make sure you are ready.

Here are worksheets that will give you review practice on basic arithmetic and algebra. You are NOT expected to do every example. The expectation is that you will look through the material and do a few examples from each skill. The answers follow each worksheet, so you will have immediate feedback on whether or not you remember the material and can do the examples correctly. Do as many examples as it takes for you to feel confident.

I have also included a lesson on fractions that I will expect you to master before next fall. It is probably different from how you were taught, but this is the way we will handle fractions that have polynomials instead of plain old numbers. Enjoy!

If you find that you don't remember something, first, try to figure out on your own how to get from the example to the answer. If you don't know how to start, ask yourself: What is possible to do? What can I try? It may take some wrong turns to get to the right destination, but that's OK. Next year's material is all about understanding and figuring things out. It is NOT about memorizing multiple series of steps and blindly filling in sets of values.

If you have trouble figuring something out, you are encouraged to work with a friend. Learning is a group activity. If you use a website or an app like Photo Math, make sure you really understand what's happening. Copying from your phone will not help you learn.

If you get really, really stuck, either because you don't remember or because a particular section was not covered in your Algebra I class, you have the option of emailing me any time before August 19.
mshore@stdomsmaine.org
I will reply with suggestions, and if necessary, we can set up a meet via Google Classroom.

Bottom line, when school starts, I will assume that you are all set with the material here, and there will be a test on the first day of class to be sure everyone is good to go. Yes, the test will count.

Have a great summer. Math Rules!

Mrs. Shore

By the time school starts, you should know all the prime numbers on this list as well as the first column of squares.

Prime numbers that are less than 100

2, 3, 5, 7
11, 13, 17, 19
23, 29
31, 37
41, 43, 47
53, 59
61, 67
71, 73, 79
83, 89
97

Squares of numbers from 0 to 100

$0^2 = 00$	$50^2 = 2500$		$100^2 = 10{,}000$
$1^2 = 01$	$49^2 = 2401$	$51^2 = 2601$	$99^2 = 9801$
$2^2 = 04$	$48^2 = 2304$	$52^2 = 2704$	$98^2 = 9604$
$3^2 = 09$	$47^2 = 2209$	$53^2 = 2809$	$97^2 = 9409$
$4^2 = 16$	$46^2 = 2116$	$54^2 = 2916$	$96^2 = 9216$
$5^2 = 25$	$45^2 = 2025$	$55^2 = 3025$	$95^2 = 9025$
$6^2 = 36$	$44^2 = 1936$	$56^2 = 3136$	$94^2 = 8836$
$7^2 = 49$	$43^2 = 1849$	$57^2 = 3249$	$93^2 = 8649$
$8^2 = 64$	$42^2 = 1764$	$58^2 = 3364$	$92^2 = 8464$
$9^2 = 81$	$41^2 = 1681$	$59^2 = 3481$	$91^2 = 8281$
$10^2 = 100$	$40^2 = 1600$	$60^2 = 3600$	$90^2 = 8100$
$11^2 = 121$	$39^2 = 1521$	$61^2 = 3721$	$89^2 = 7921$
$12^2 = 144$	$38^2 = 1444$	$62^2 = 3844$	$88^2 = 7744$
$13^2 = 169$	$37^2 = 1369$	$63^2 = 3969$	$87^2 = 7569$
$14^2 = 196$	$36^2 = 1296$	$64^2 = 4096$	$86^2 = 7396$
$15^2 = 225$	$35^2 = 1225$	$65^2 = 4225$	$85^2 = 7225$
$16^2 = 256$	$34^2 = 1156$	$66^2 = 4356$	$84^2 = 7156$
$17^2 = 289$	$33^2 = 1089$	$67^2 = 4489$	$83^2 = 6889$
$18^2 = 324$	$32^2 = 1024$	$68^2 = 4624$	$82^2 = 6724$
$19^2 = 361$	$31^2 = 961$	$69^2 = 4761$	$81^2 = 6561$
$20^2 = 400$	$30^2 = 900$	$70^2 = 4900$	$80^2 = 6400$
$21^2 = 441$	$29^2 = 841$	$71^2 = 5041$	$79^2 = 6241$
$22^2 = 484$	$28^2 = 784$	$72^2 = 5184$	$78^2 = 6084$
$23^2 = 529$	$27^2 = 729$	$73^2 = 5329$	$77^2 = 5929$
$24^2 = 576$	$26^2 = 676$	$74^2 = 5476$	$76^2 = 5776$
$25^2 = 625$		$75^2 = 5625$	

Lesson on basic operations with fractions.

I don't know how you were taught to deal with fractions - reducing them, multiplying and dividing them, and adding and subtracting them with common denominators. Here are the methods we will use in Algebra II Honors as well as in Precalculus Honors. If these are unfamiliar to you, please think them through and use these methods with the summer worksheets. The concepts will be critical next year when our fractions contain polynomials.

1. Reducing fractions. Your mantra is, "If you can't factor, you can't reduce." In order to reduce a fraction to lowest terms, you need to factor it.

$\frac{36}{45} = \frac{2 \cdot 2 \cdot 3 \cdot 3}{3 \cdot 3 \cdot 5}$ Remember that a fraction bar means "divide" and that a number divided by itself (excluding 0) equals 1. We can divide out the two threes and we are left with $\frac{2 \cdot 2}{5}$ or $\frac{4}{5}$. Please do not insist that 9 "goes into" 36 and also into 45, so we can "just" cross them out. This won't work when the fraction has polynomial numerators and/or denominators. Please FACTOR the numerator and denominator, then divide out what you can, and finally, multiply the factors that remain.

2. Multiplying and dividing fractions. This is the same process, but with the knowledge that when we multiply, we can divide out any factor in either numerator with the same factor in either denominator.

$\frac{15}{22} \times \frac{8}{25} = \frac{3 \cdot 5}{2 \cdot 11} \times \frac{2 \cdot 2 \cdot 2}{5 \cdot 5}$ We can divide out 5/5 and 2/2, leaving us with $\frac{3 \cdot 2 \cdot 2}{11 \cdot 5} = \frac{12}{55}$

Remember also, that when we divide one fraction by another, we invert the divisor (the second one) and multiply. I will show you next year why this is the case.

Adding and Subtracting on the next page.

3. Adding and subtracting fractions. We need a common denominator. We will **BUILD** one. We will **NOT** list multiples of both denominators until we come to a number that is in both lists. This will not work with polynomials in the denominator. Here is the building process.

$\frac{7}{12} + \frac{4}{15}$ First, factor both denominators. $\frac{7}{2 \cdot 2 \cdot 3} + \frac{4}{3 \cdot 5}$ Your common denominator must contain all the factors with no over-kill. In this case, your denominator needs 2, 2, 3 from the 12, and it also needs 3, 5 from the 15. However, it does not need the 3 a second time. The only time it needs a factor more than once is when that factor appears more than once in a single denominator, as in the case of the two 2s in 12.

Our common denominator now looks like this $\frac{\quad}{2 \cdot 2 \cdot 3 \cdot 5}$.
Resist the temptation to say 60. It's not helpful when you have polynomials instead of numbers. Leave it in factors.

Now, we adjust our original fractions. We notice that the first denominator is made up of $2 \cdot 2 \cdot 3$, but it is missing the 5. We know that we are allowed to multiply any expression by 1, and that we can express 1 as a fraction with the same numerator and denominator (again, excluding 0/0). We multiply the first fraction by 5/5, giving us $\frac{7 \cdot 5}{2 \cdot 2 \cdot 3 \cdot 5}$ We notice that the denominator of the second fraction has the 3 and the 5, but it is missing the two 2s. We multiply this fraction by $2 \cdot 2 / 2 \cdot 2$, producing $\frac{4 \cdot 2 \cdot 2}{2 \cdot 2 \cdot 3 \cdot 5}$ Now the denominators match. We combine our numerators - 35 + 16 = 51, giving us $\frac{51}{2 \cdot 2 \cdot 3 \cdot 5}$

Notice that we have still not multiplied out the denominator. This is deliberate. At this point, we notice that the numerator is not prime. (We notice this because we have memorized the list of primes on the included sheet.). Since the number 51 is not prime, we set about factoring it. We notice that it is divisible by 3 (because when we add up its digits, we get 6, and since 6 is divisible by 3, then 51 is also divisible by 3). The factors of 51 are 3 and 17.
We now have $\frac{3 \cdot 17}{2 \cdot 2 \cdot 3 \cdot 5}$ We can divide out the 3s and multiply the remaining factors, leaving us with $\frac{17}{20}$ as our final answer.

Kuta Software - Infinite Pre-Algebra

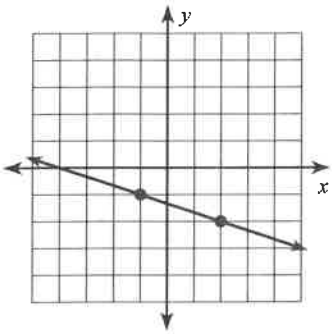
Name_____

Slope

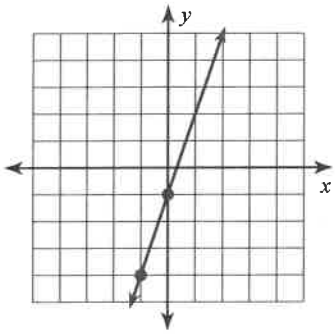
Date_____ Period____

Find the slope of each line.

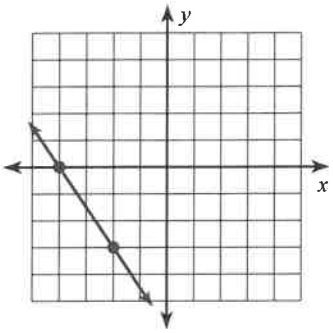
1)



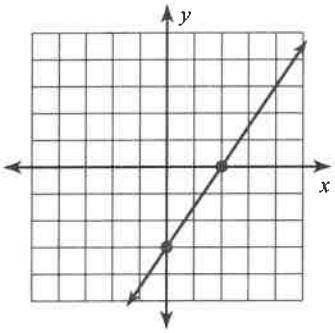
2)



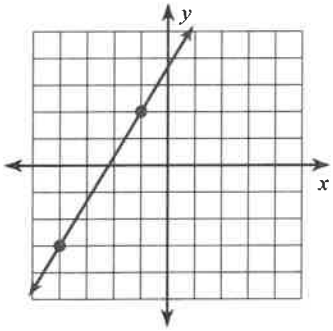
3)



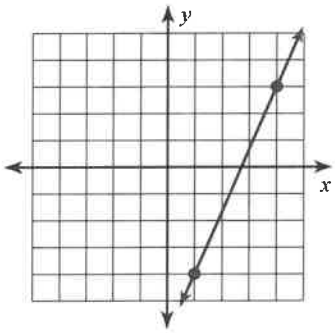
4)



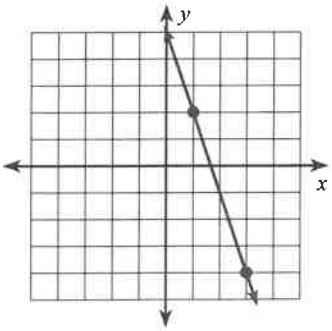
5)



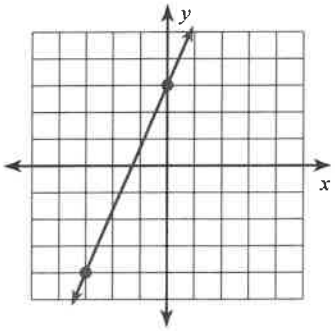
6)



7)



8)



Find the slope of the line through each pair of points.

9) $(8, 10), (-7, 14)$

10) $(-3, 1), (-17, 2)$

11) $(-20, -4), (-12, -10)$

12) $(-12, -5), (0, -8)$

13) $(-19, -6), (15, 16)$

14) $(-6, 9), (7, -9)$

15) $(-18, -20), (-18, -15)$

16) $(12, -18), (11, 12)$

Find the slope of each line.

17) $y = -5x - 1$

18) $y = \frac{1}{3}x - 4$

19) $y = -\frac{1}{5}x - 4$

20) $x = 1$

21) $y = \frac{1}{4}x + 1$

22) $y = -\frac{2}{3}x - 1$

23) $y = -x + 2$

24) $y = -x - 1$

25) $2x + 3y = 9$

26) $5x + 2y = 6$

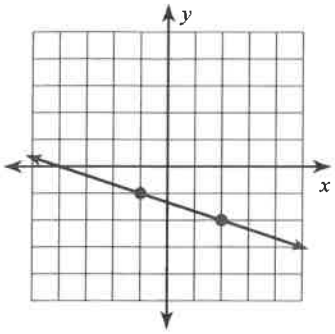
Name_____

Slope

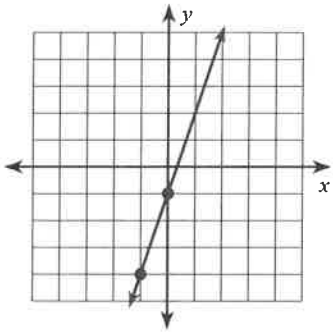
Date_____ Period____

Find the slope of each line.

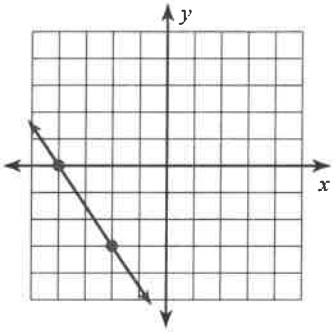
1) $-\frac{1}{3}$



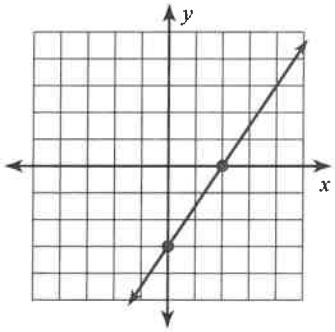
2) 3



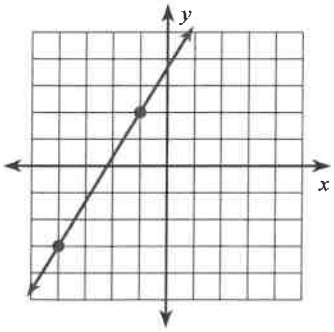
3) $-\frac{3}{2}$



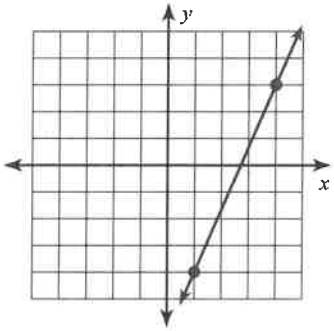
4) $\frac{3}{2}$



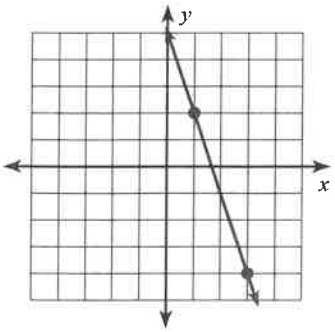
5) $\frac{5}{3}$



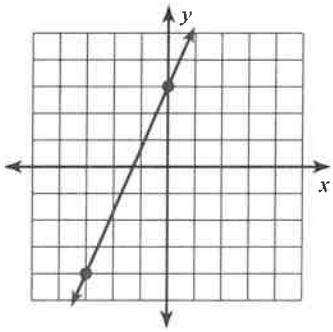
6) $\frac{7}{3}$



7) -3



8) $\frac{7}{3}$



Find the slope of the line through each pair of points.

9) $(8, 10), (-7, 14)$

$-\frac{4}{15}$

10) $(-3, 1), (-17, 2)$

$-\frac{1}{14}$

11) $(-20, -4), (-12, -10)$

$-\frac{3}{4}$

12) $(-12, -5), (0, -8)$

$-\frac{1}{4}$

13) $(-19, -6), (15, 16)$

$\frac{11}{17}$

14) $(-6, 9), (7, -9)$

$-\frac{18}{13}$

15) $(-18, -20), (-18, -15)$

Undefined

16) $(12, -18), (11, 12)$

-30

Find the slope of each line.

17) $y = -5x - 1$

-5

18) $y = \frac{1}{3}x - 4$

$\frac{1}{3}$

19) $y = -\frac{1}{5}x - 4$

$-\frac{1}{5}$

20) $x = 1$

Undefined

21) $y = \frac{1}{4}x + 1$

$\frac{1}{4}$

22) $y = -\frac{2}{3}x - 1$

$-\frac{2}{3}$

23) $y = -x + 2$

-1

24) $y = -x - 1$

-1

25) $2x + 3y = 9$

$-\frac{2}{3}$

26) $5x + 2y = 6$

$-\frac{5}{2}$

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

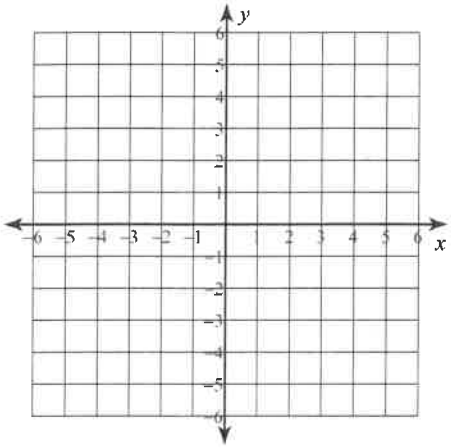
Name_____

Graphing Lines in Slope-Intercept Form

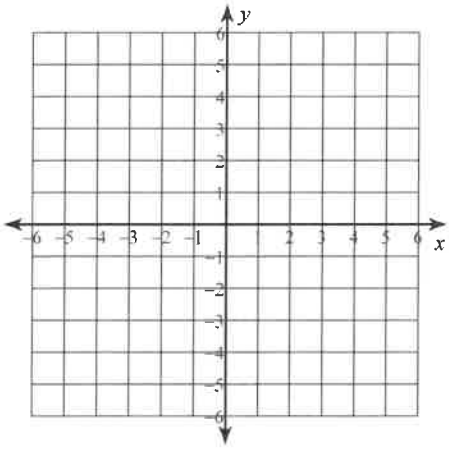
Date_____ Period____

Sketch the graph of each line.

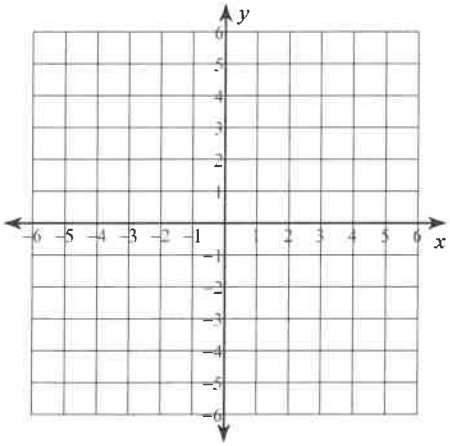
1) $y = \frac{1}{4}x - 1$



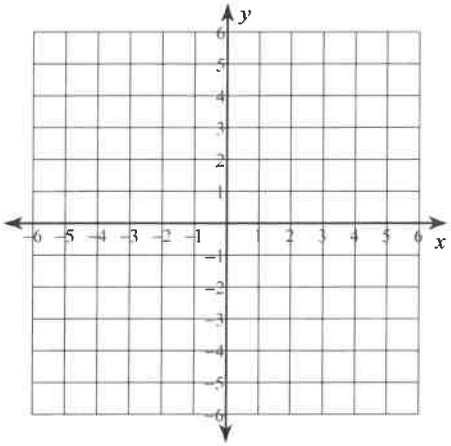
2) $y = -x + 2$



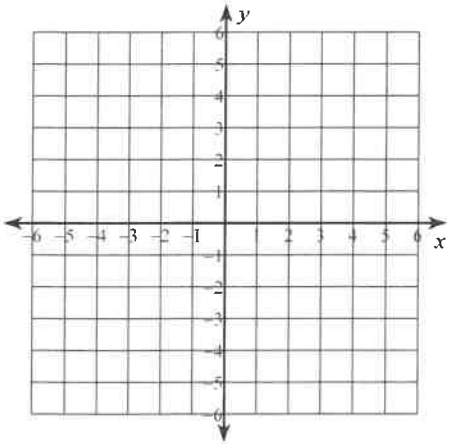
3) $y = x + 1$



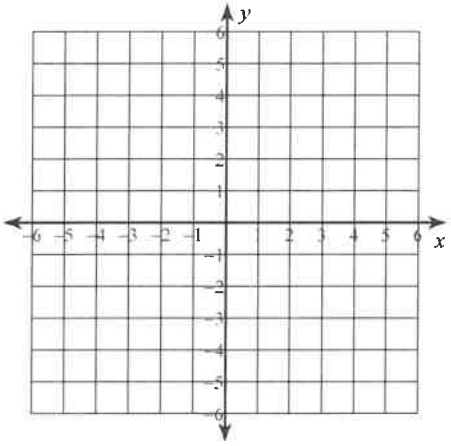
4) $y = \frac{4}{3}x - 4$



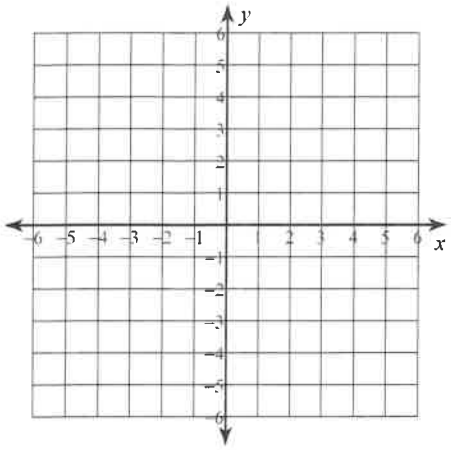
5) $y = -3x - 3$



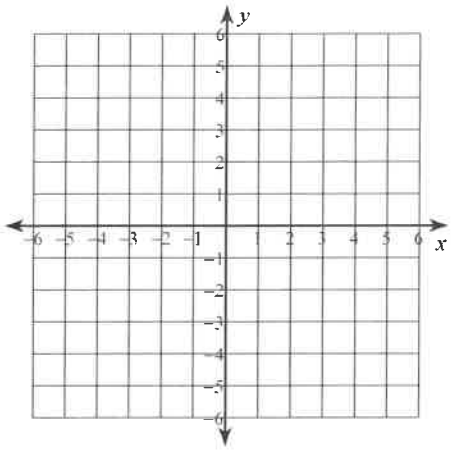
6) $y = 4$



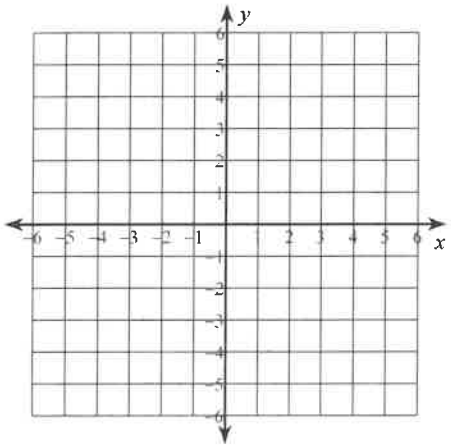
7) $y = \frac{3}{5}x - 1$



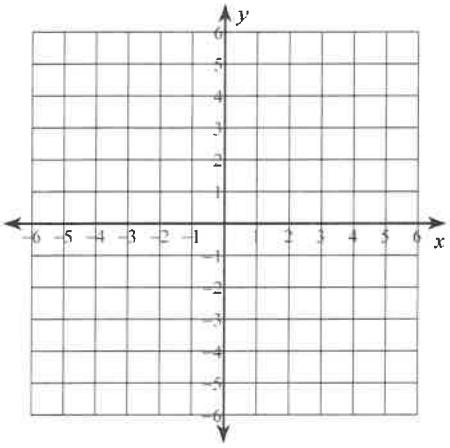
8) $x = 5$



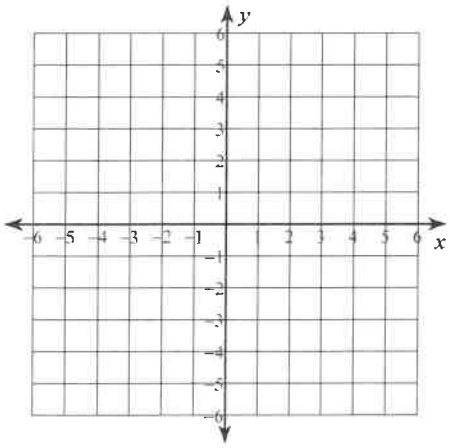
9) $y = 3$



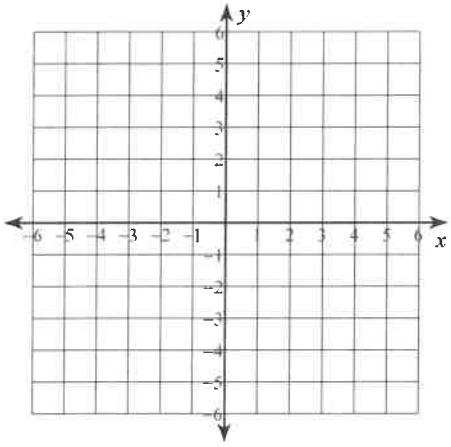
10) $y = 3x - 2$



11) $y = 4x + 3$



12) $y = \frac{6}{5}x + 5$



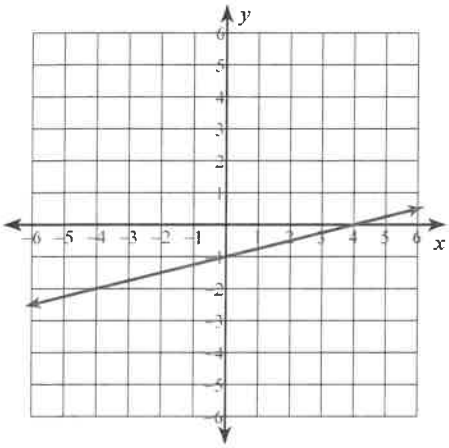
Name_____

Graphing Lines in Slope-Intercept Form

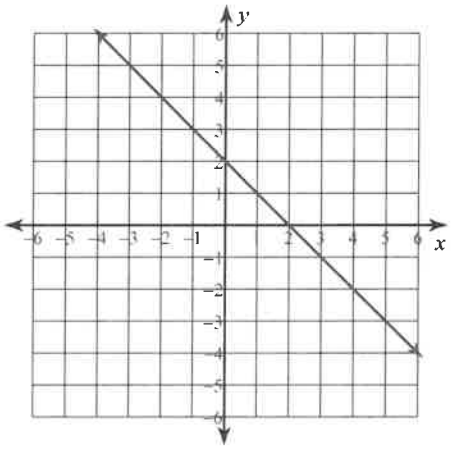
Date_____ Period____

Sketch the graph of each line.

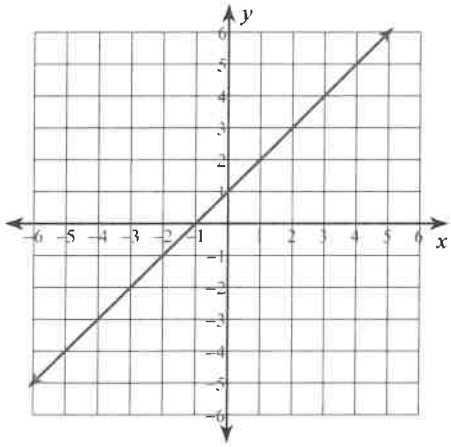
1) $y = \frac{1}{4}x - 1$



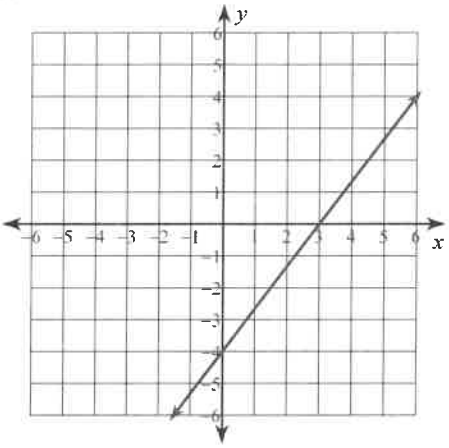
2) $y = -x + 2$



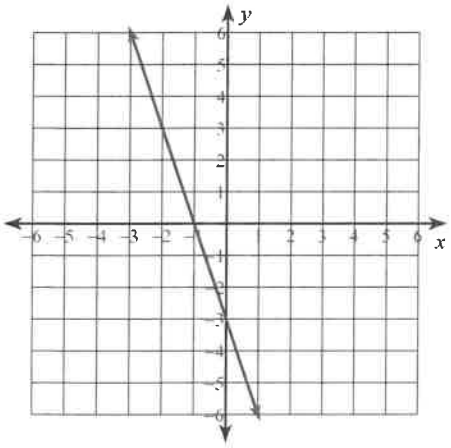
3) $y = x + 1$



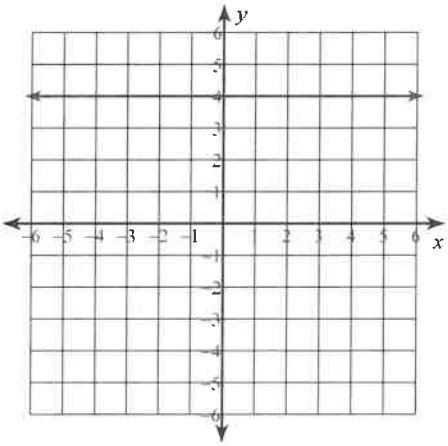
4) $y = \frac{4}{3}x - 4$



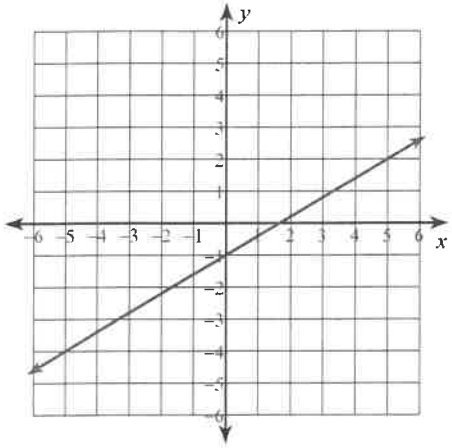
5) $y = -3x - 3$



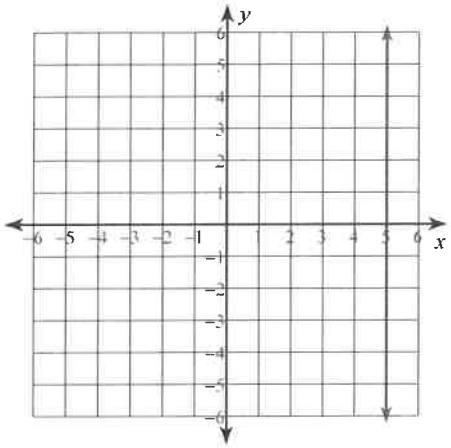
6) $y = 4$



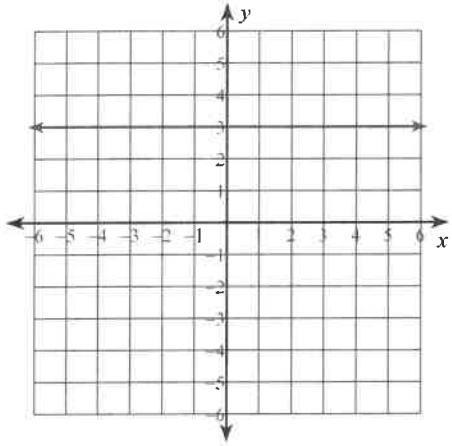
7) $y = \frac{3}{5}x - 1$



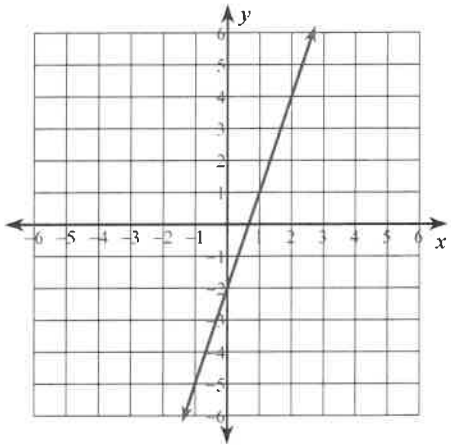
8) $x = 5$



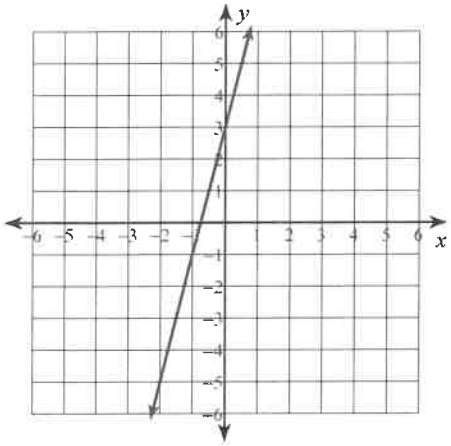
9) $y = 3$



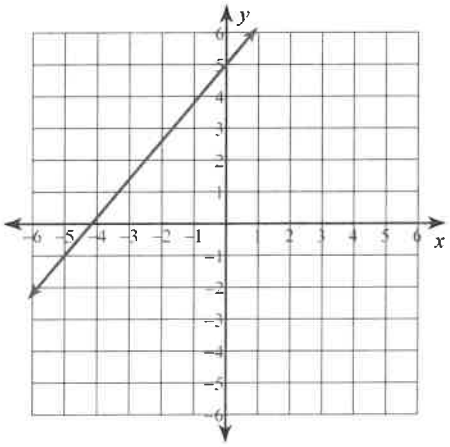
10) $y = 3x - 2$



11) $y = 4x + 3$



12) $y = \frac{6}{5}x + 5$



Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Kuta Software - Infinite Pre-Algebra

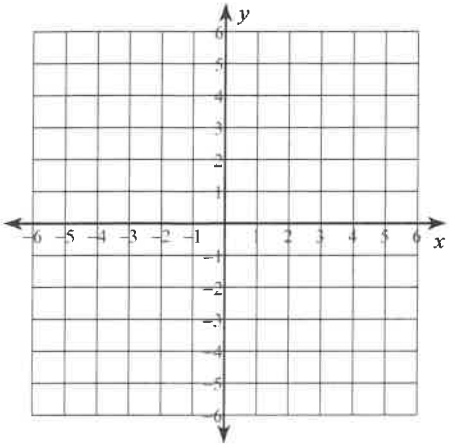
Name_____

Graphing Lines in Standard Form

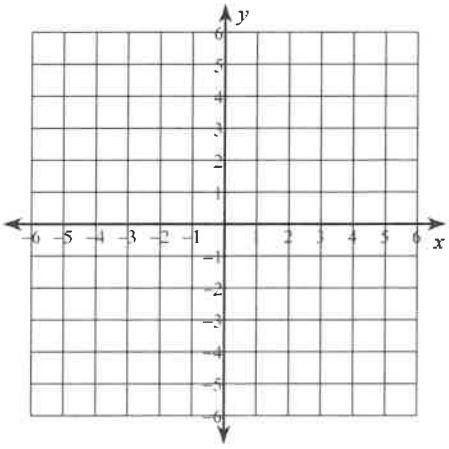
Date_____ Period____

Sketch the graph of each line.

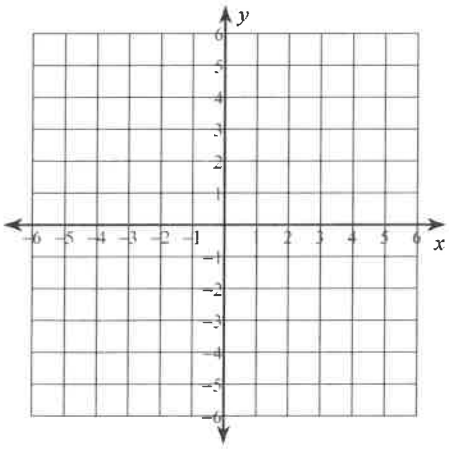
1) $4x + y = 0$



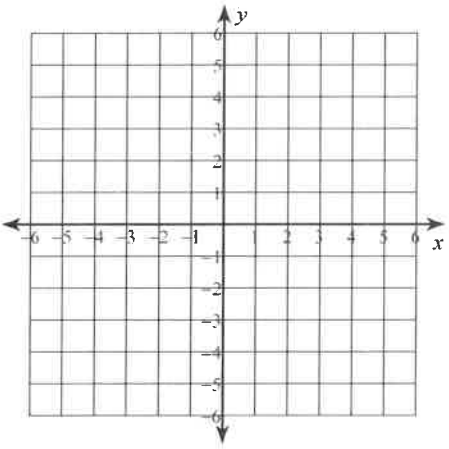
2) $10x - 3y = -15$



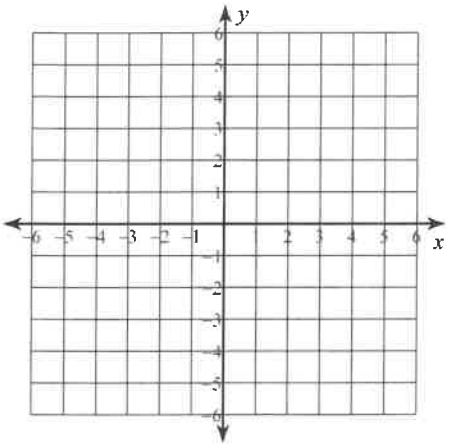
3) $x + y = -3$



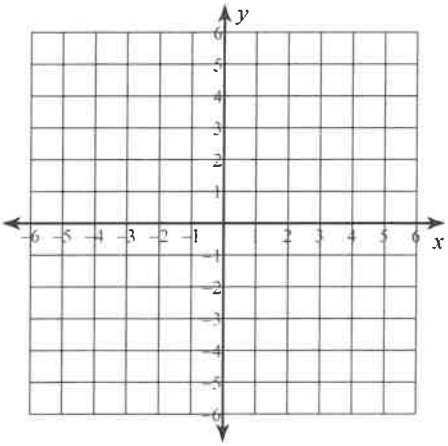
4) $x = 5$



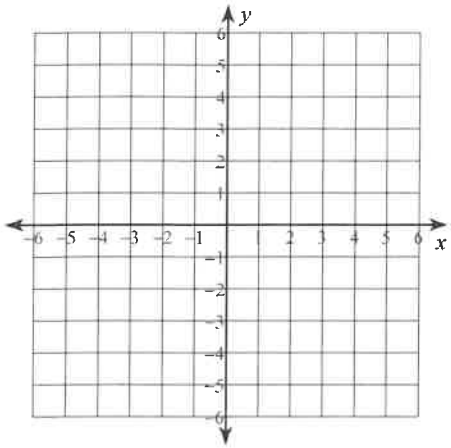
5) $7x + 2y = -10$



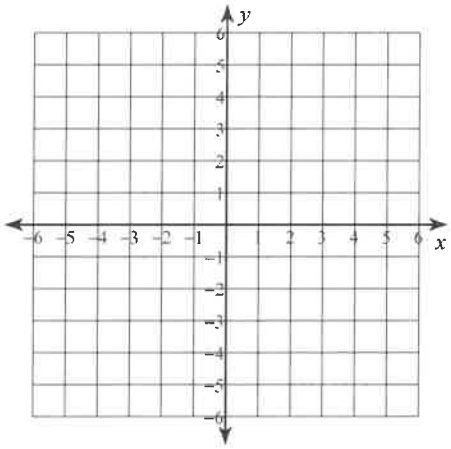
6) $x - 2y = -6$



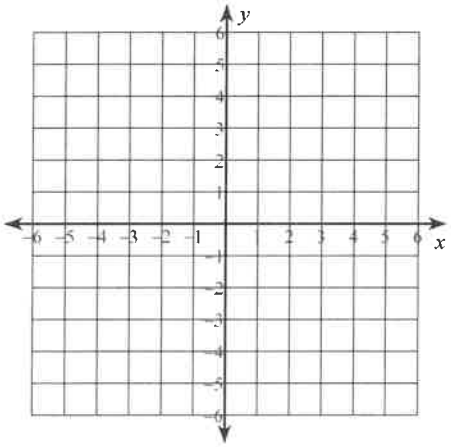
7) $x + y = 0$



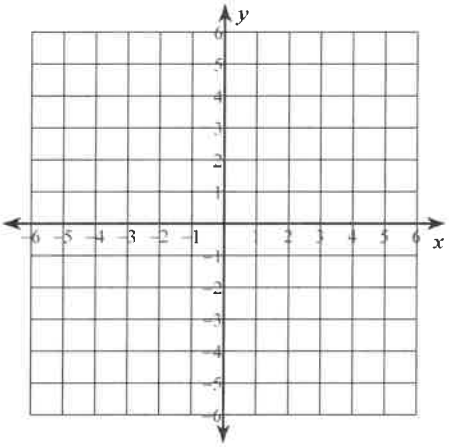
8) $9x + y = 4$



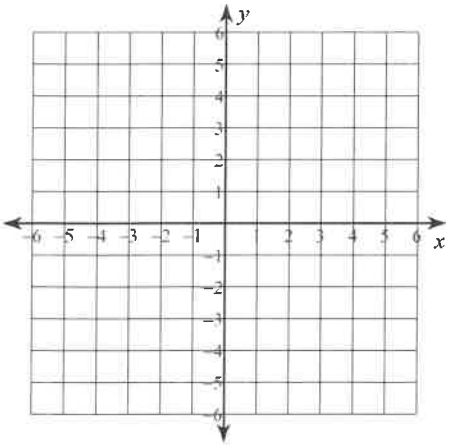
9) $y = 5$



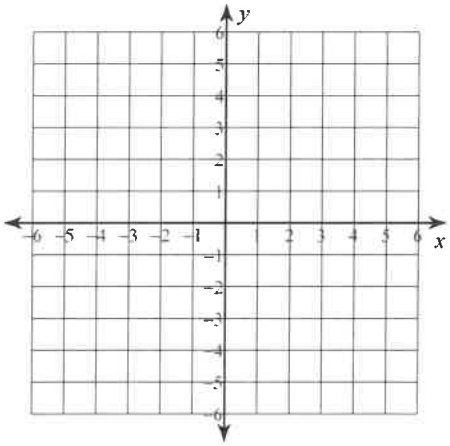
10) $x + 4y = -12$



11) $x - 3y = 3$



12) $x + y = 4$



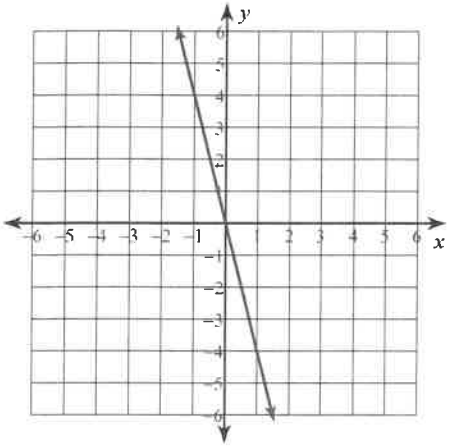
Name_____

Graphing Lines in Standard Form

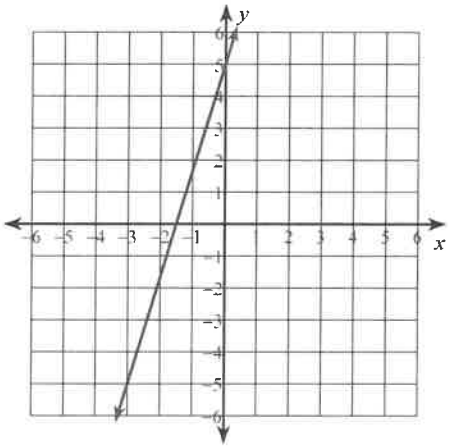
Date_____ Period____

Sketch the graph of each line.

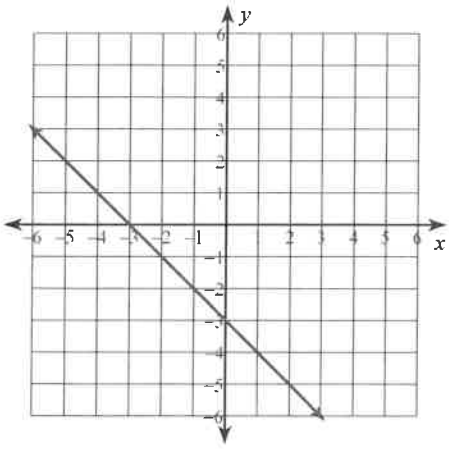
1) $4x + y = 0$



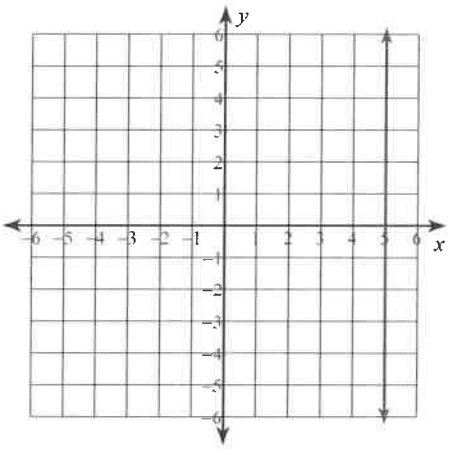
2) $10x - 3y = -15$



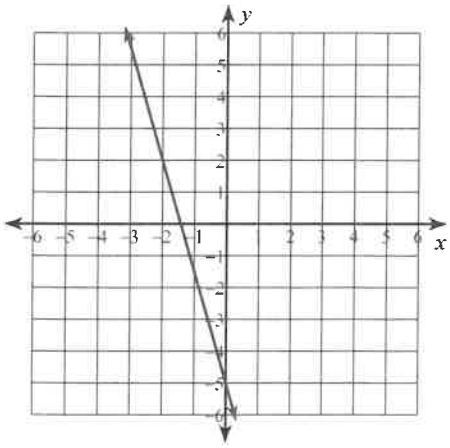
3) $x + y = -3$



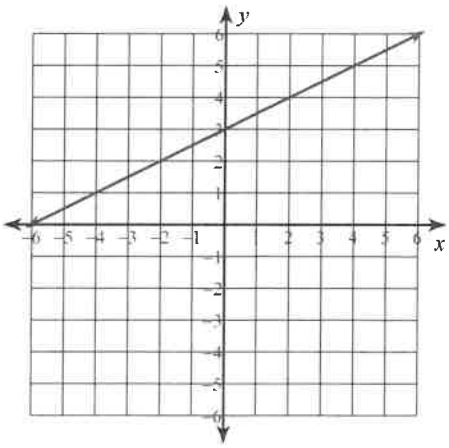
4) $x = 5$



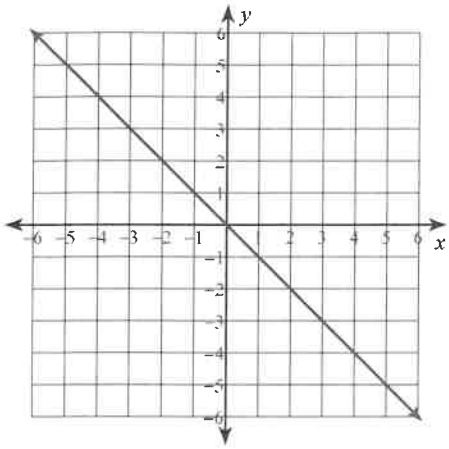
5) $7x + 2y = -10$



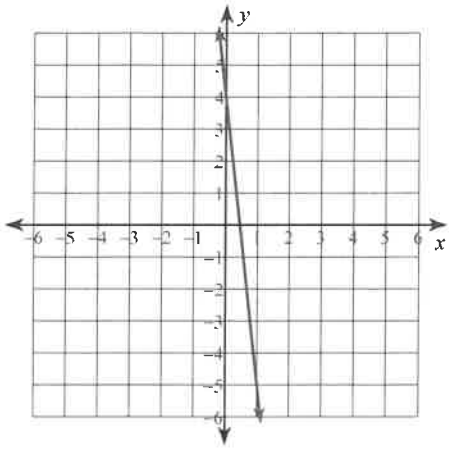
6) $x - 2y = -6$



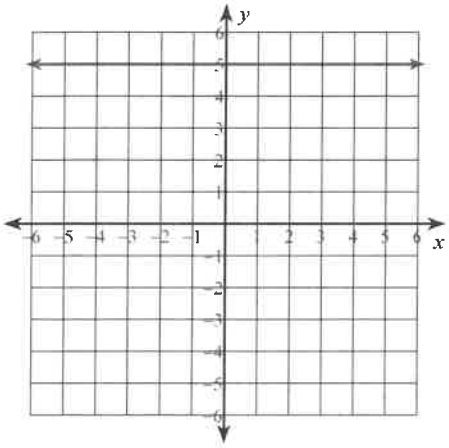
7) $x + y = 0$



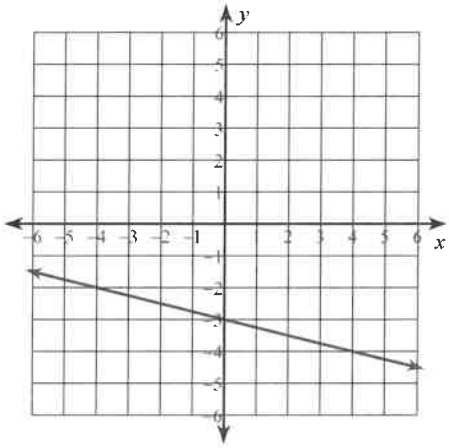
8) $9x + y = 4$



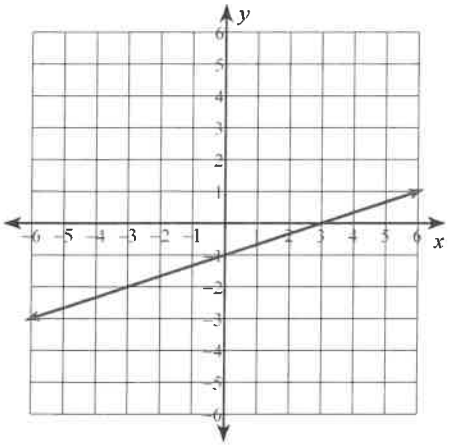
9) $y = 5$



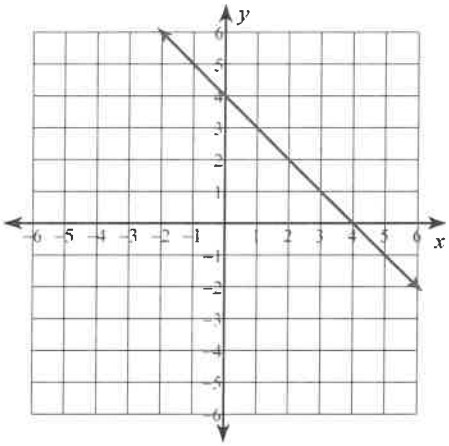
10) $x + 4y = -12$



11) $x - 3y = 3$



12) $x + y = 4$



Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

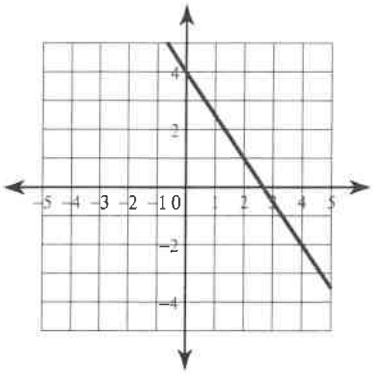
Name_____

Writing Linear Equations

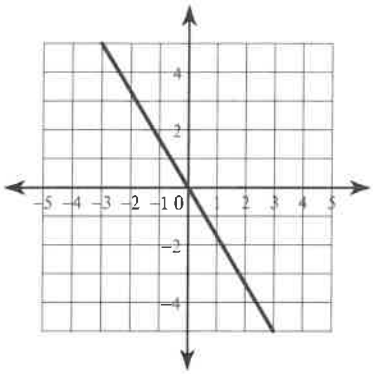
Date_____ Period____

Write the slope-intercept form of the equation of each line.

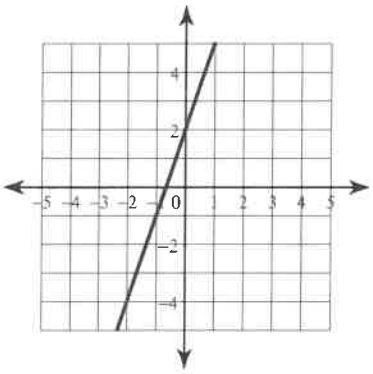
1)



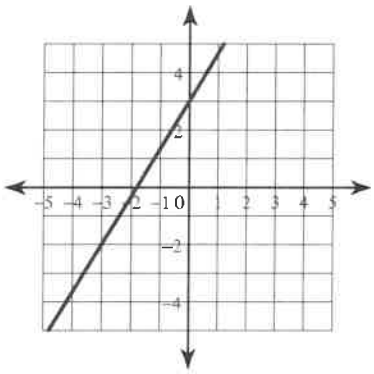
2)



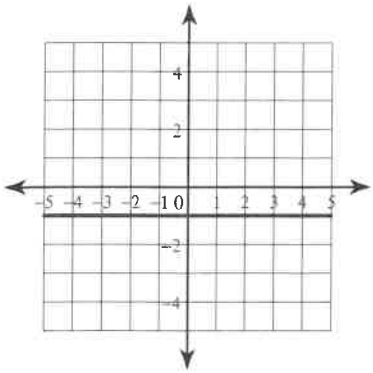
3)



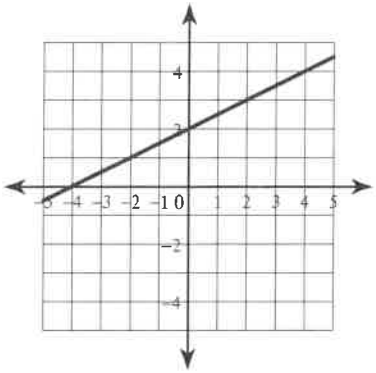
4)



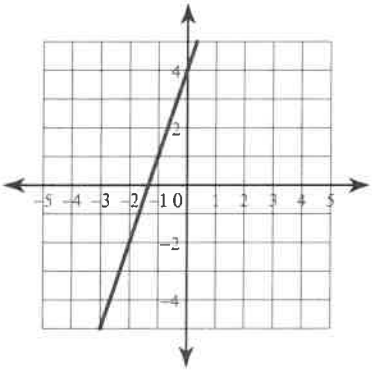
5)


4
2
−5 −4 −3 −2 −1 0 1 2 3 4 5
−2
−4

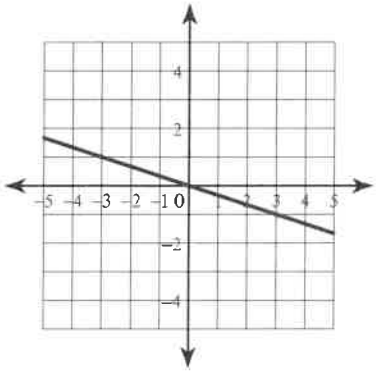
6)


4
2
−5 −4 −3 −2 −1 0 1 2 3 4 5
−2
−4

7)


4
2
−5 −4 −3 −2 −1 0 1 2 3 4 5
−2
−4

8)


4
2
−5 −4 −3 −2 −1 0 1 2 3 4 5
−2
−4

Kuta Software - Infinite Pre-Algebra

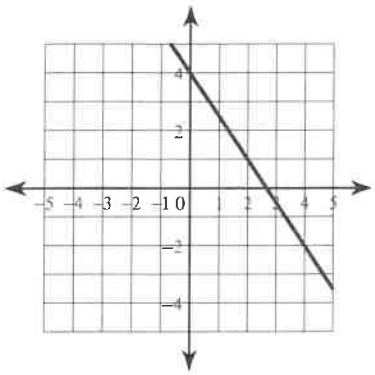
Name_____

Writing Linear Equations

Date_____ Period____

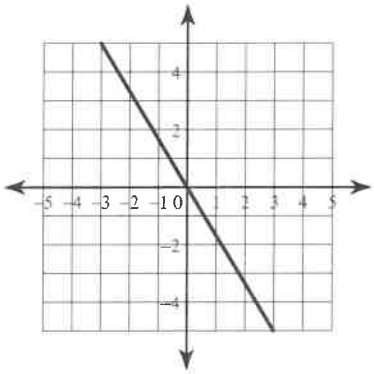
Write the slope-intercept form of the equation of each line.

1)



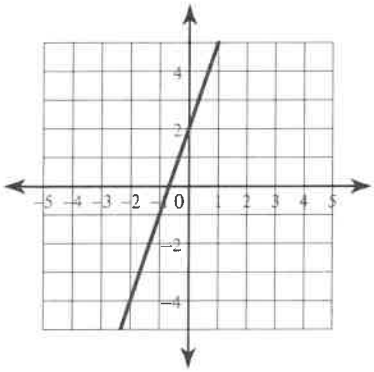
$y = -\frac{3}{2}x + 4$

2)



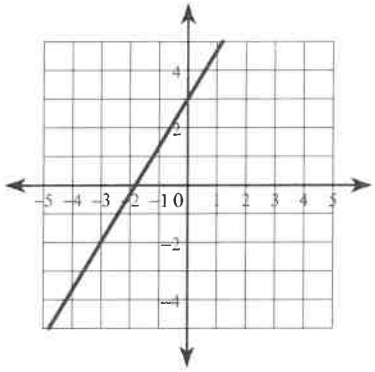
$y = -\frac{5}{3}x$

3)



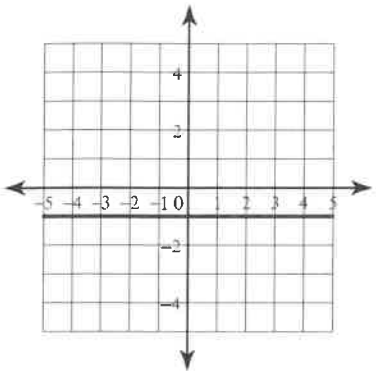
$y = 3x + 2$

4)



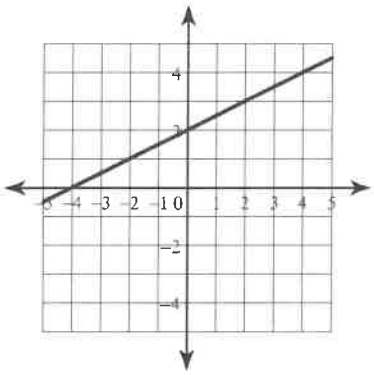
$y = \frac{5}{3}x + 3$

5)



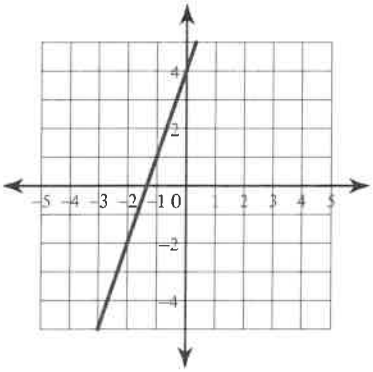
$y = -1$

6)



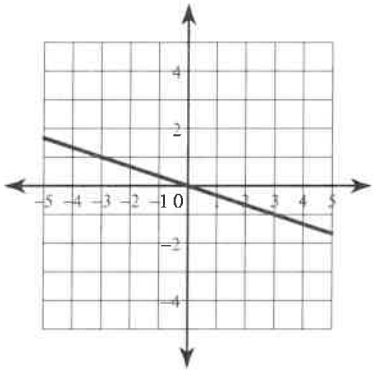
$y = \frac{1}{2}x + 2$

7)



$y = 3x + 4$

8)



$y = -\frac{1}{3}x$

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Kuta Software - Infinite Pre-Algebra

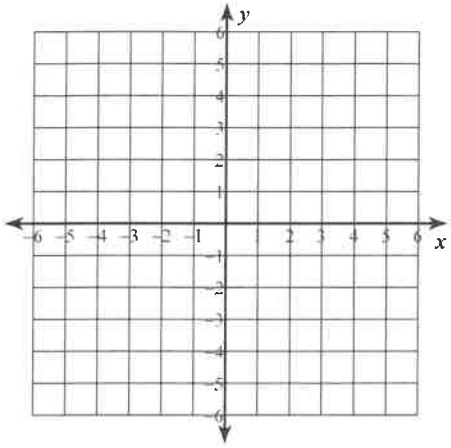
Name_____

Graphing Linear Inequalities

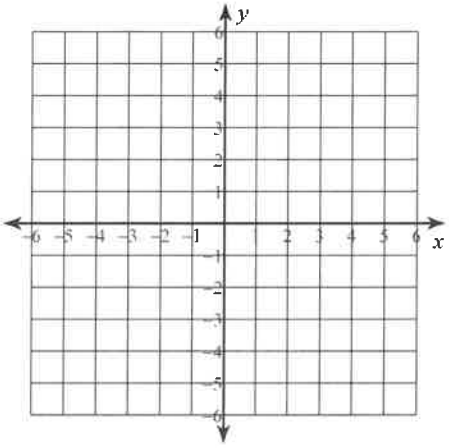
Date_____ Period____

Sketch the graph of each linear inequality.

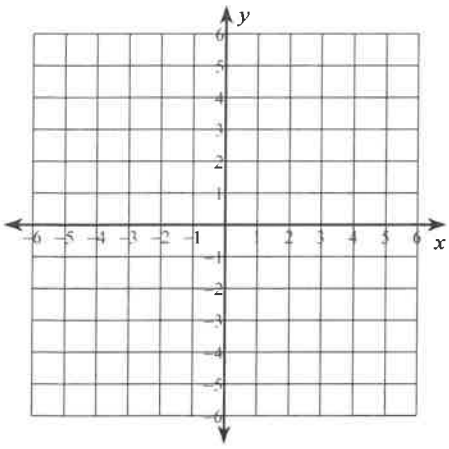
1) $y \leq -\frac{8}{3}x - 3$



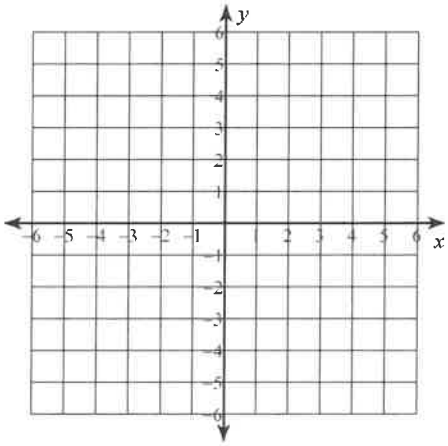
2) $y > -\frac{2}{5}x - 4$



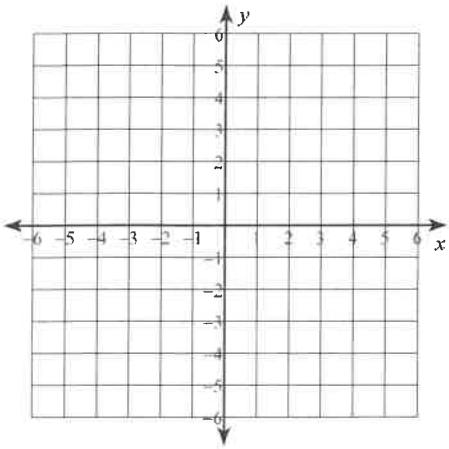
3) $y < -\frac{3}{4}x - 2$



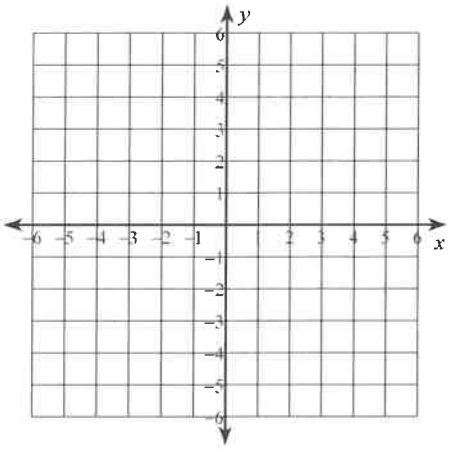
4) $x \geq 4$



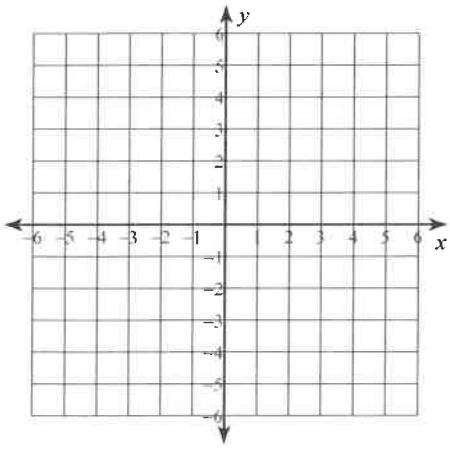
5) $y < 5x + 1$



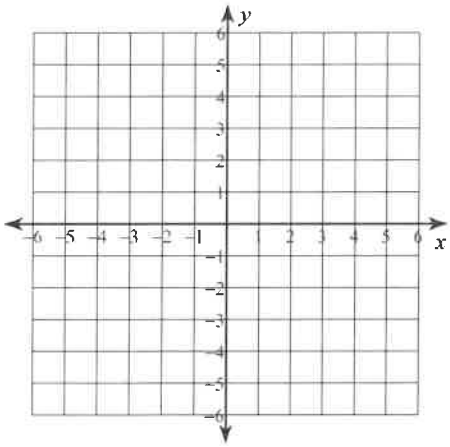
6) $y \geq -2x + 3$



7) $2x + 5y \leq -20$



8) $3x + 4y > 4$



Kuta Software - Infinite Pre-Algebra

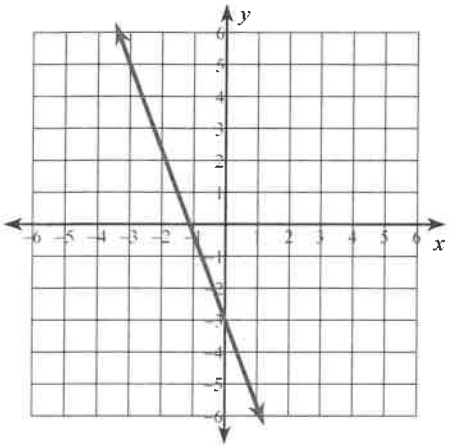
Name_____

Graphing Linear Inequalities

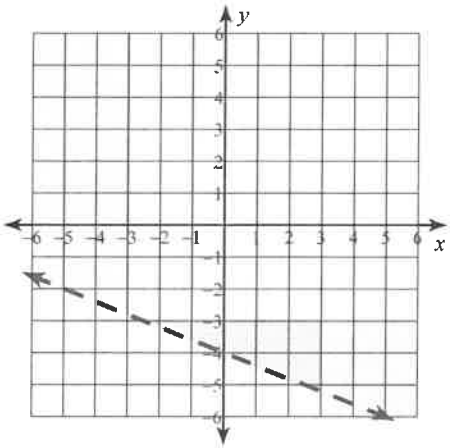
Date_____ Period____

Sketch the graph of each linear inequality.

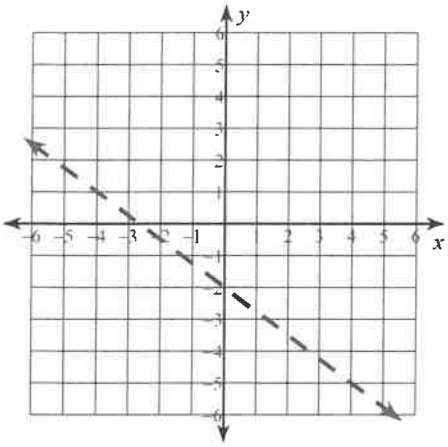
1) $y \leq -\frac{8}{3}x - 3$



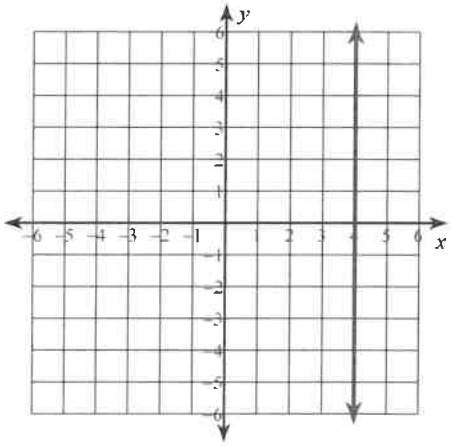
2) $y > -\frac{2}{5}x - 4$



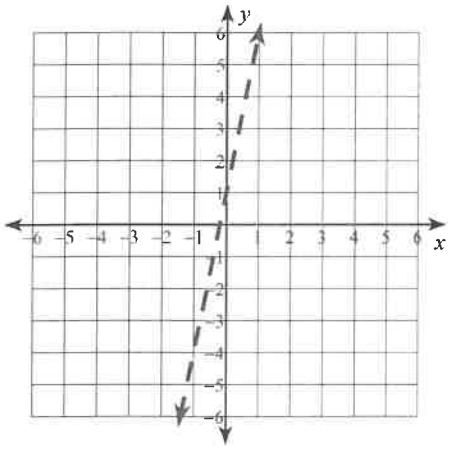
3) $y < -\frac{3}{4}x - 2$



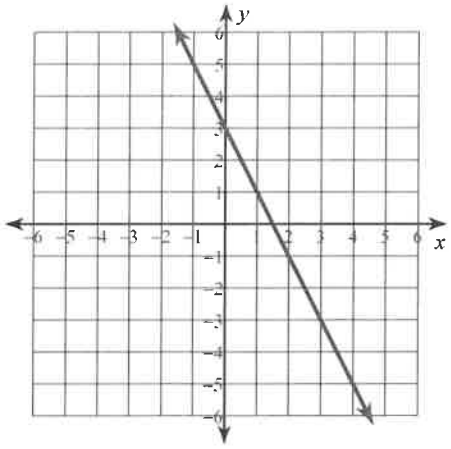
4) $x \geq 4$



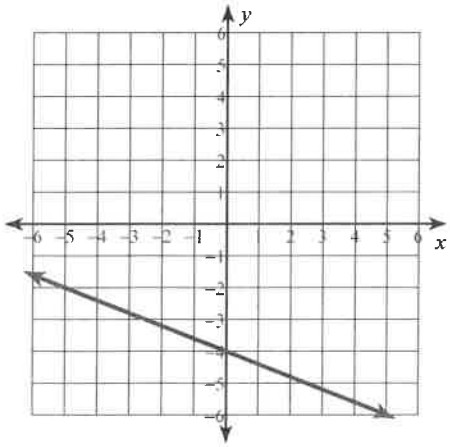
5) $y < 5x + 1$



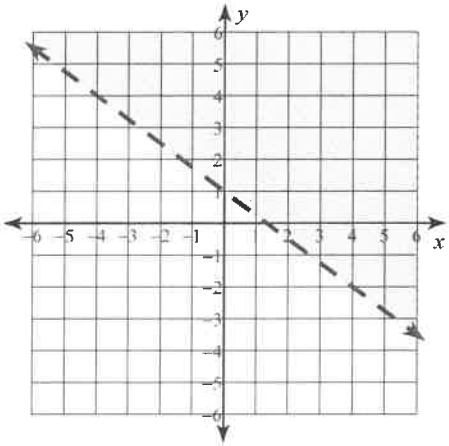
6) $y \geq -2x + 3$



7) $2x + 5y \leq -20$



8) $3x + 4y > 4$



Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Name_____

Fractions, Decimals, and Percents

Date_____ Period____

Write each as a decimal. Round to the thousandths place.

1) 90%

2) 30%

3) 115.9%

4) 9%

5) 7%

6) 65%

7) 0.3%

8) 445%

Write each as a percent. Round to the nearest tenth of a percent.

9) 0.452

10) 0.006

11) 0.002

12) 0.05

13) 4.78

14) 0.1

15) 3.63

16) 0.03

Write each as a fraction.

17) 25%

18) 70%

19) 93%

20) 58%

21) 50%

22) $66.\overline{6}\%$

23) 20%

24) 80%

25) 71%

26) 30%

Write each as a percent. Use repeating decimals when necessary.

27) $\frac{1}{2}$

28) $\frac{1}{8}$

29) $\frac{2}{3}$

30) $\frac{1}{100}$

31) $2\frac{1}{10}$

32) $\frac{3}{8}$

33) $\frac{1}{10}$

34) $\frac{87}{100}$

Name_____

Fractions, Decimals, and Percents

Date_____ Period____

Write each as a decimal. Round to the thousandths place.

1) 90%

0.9

2) 30%

0.3

3) 115.9%

1.159

4) 9%

0.09

5) 7%

0.07

6) 65%

0.65

7) 0.3%

0.003

8) 445%

4.45

Write each as a percent. Round to the nearest tenth of a percent.

9) 0.452

45.2%

10) 0.006

0.6%

11) 0.002

0.2%

12) 0.05

5%

13) 4.78

478%

14) 0.1

10%

15) 3.63

363%

16) 0.03

3%

Write each as a fraction.

17) 25%

$\frac{1}{4}$

18) 70%

$\frac{7}{10}$

19) 93%

$\frac{93}{100}$

20) 58%

$\frac{29}{50}$

21) 50%

$\frac{1}{2}$

22) $66.\overline{6}\%$

$\frac{2}{3}$

23) 20%

$\frac{1}{5}$

24) 80%

$\frac{4}{5}$

25) 71%

$\frac{71}{100}$

26) 30%

$\frac{3}{10}$

Write each as a percent. Use repeating decimals when necessary.

27) $\frac{1}{2}$

50%

28) $\frac{1}{8}$

12.5%

29) $\frac{2}{3}$

$66.\overline{6}\%$

30) $\frac{1}{100}$

1%

31) $2\frac{1}{10}$

210%

32) $\frac{3}{8}$

37.5%

33) $\frac{1}{10}$

10%

34) $\frac{87}{100}$

87%

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Name_____

Add/Subtracting Fractions and Mixed Numbers

Date_____ Period____

Evaluate each expression.

1) $\frac{5}{4} - \frac{3}{4}$

2) $\frac{3}{2} - \frac{1}{2}$

3) $\frac{2}{5} + \frac{4}{5}$

4) $\frac{1}{3} - \frac{1}{3}$

5) $6 - \frac{1}{6}$

6) $\frac{1}{2} - \frac{1}{2}$

7) $\frac{1}{5} + \frac{1}{5}$

8) $\frac{7}{6} - \frac{5}{6}$

9) $\left(-\frac{4}{5}\right) - \frac{7}{8}$

10) $\frac{1}{3} - \left(-\frac{5}{3}\right)$

11) $\left(-\frac{1}{3}\right) + \frac{3}{8}$

12) $\left(-\frac{10}{7}\right) + \frac{1}{6}$

13) $\frac{9}{5} + \left(-\frac{4}{3}\right)$

14) $2 - \frac{13}{8}$

15) $\frac{9}{5} - \frac{5}{8}$

16) $\left(-\frac{4}{3}\right) - \left(-\frac{3}{2}\right)$

17) $(-1) + \left(-2\frac{2}{5}\right)$

18) $\left(-3\frac{3}{5}\right) - 4\frac{2}{5}$

19) $3\frac{6}{7} + \left(-1\frac{1}{7}\right)$

20) $1\frac{2}{7} + \left(-3\frac{4}{7}\right)$

21) $2\frac{1}{3} + \left(-1\frac{2}{3}\right)$

22) $\left(-1\frac{3}{4}\right) + \left(-3\frac{3}{4}\right)$

23) $\left(-1\frac{7}{8}\right) + \left(-3\frac{1}{2}\right)$

24) $\left(-2\frac{7}{8}\right) + \left(-1\frac{1}{2}\right)$

25) $\left(-2\frac{5}{6}\right) - \left(-1\frac{1}{4}\right)$

26) $\left(-3\frac{5}{8}\right) - 4\frac{2}{5}$

27) $1\frac{2}{5} - \left(-3\frac{3}{4}\right)$

28) $2\frac{4}{5} - \frac{5}{8}$

Name_____

Add/Subtracting Fractions and Mixed Numbers

Date_____ Period____

Evaluate each expression.

1) $\frac{5}{4} - \frac{3}{4}$

$\frac{1}{2}$

2) $\frac{3}{2} - \frac{1}{2}$

1

3) $\frac{2}{5} + \frac{4}{5}$

$\frac{6}{5}$

4) $\frac{1}{3} - \frac{1}{3}$

0

5) $6 - \frac{1}{6}$

$\frac{35}{6}$

6) $\frac{1}{2} - \frac{1}{2}$

0

7) $\frac{1}{5} + \frac{1}{5}$

$\frac{2}{5}$

8) $\frac{7}{6} - \frac{5}{6}$

$\frac{1}{3}$

9) $\left(-\frac{4}{5}\right) - \frac{7}{8}$

$-\frac{67}{40}$

10) $\frac{1}{3} - \left(-\frac{5}{3}\right)$

2

11) $\left(-\frac{1}{3}\right) + \frac{3}{8}$

$\frac{1}{24}$

12) $\left(-\frac{10}{7}\right) + \frac{1}{6}$

$-\frac{53}{42}$

13) $\frac{9}{5} + \left(-\frac{4}{3}\right)$

$\frac{7}{15}$

14) $2 - \frac{13}{8}$

$\frac{3}{8}$

15) $\frac{9}{5} - \frac{5}{8}$

$\frac{47}{40}$

16) $\left(-\frac{4}{3}\right) - \left(-\frac{3}{2}\right)$

$\frac{1}{6}$

17) $(-1) + \left(-2\frac{2}{5}\right)$

$-3\frac{2}{5}$

18) $\left(-3\frac{3}{5}\right) - 4\frac{2}{5}$

-8

19) $3\frac{6}{7} + \left(-1\frac{1}{7}\right)$

$2\frac{5}{7}$

20) $1\frac{2}{7} + \left(-3\frac{4}{7}\right)$

$-2\frac{2}{7}$

21) $2\frac{1}{3} + \left(-1\frac{2}{3}\right)$

$\frac{2}{3}$

22) $\left(-1\frac{3}{4}\right) + \left(-3\frac{3}{4}\right)$

$-5\frac{1}{2}$

23) $\left(-1\frac{7}{8}\right) + \left(-3\frac{1}{2}\right)$

$-5\frac{3}{8}$

24) $\left(-2\frac{7}{8}\right) + \left(-1\frac{1}{2}\right)$

$-4\frac{3}{8}$

25) $\left(-2\frac{5}{6}\right) - \left(-1\frac{1}{4}\right)$

$-1\frac{7}{12}$

26) $\left(-3\frac{5}{8}\right) - 4\frac{2}{5}$

$-8\frac{1}{40}$

27) $1\frac{2}{5} - \left(-3\frac{3}{4}\right)$

$5\frac{3}{20}$

28) $2\frac{4}{5} - \frac{5}{8}$

$2\frac{7}{40}$

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Name_____

Multiplying/Dividing Fractions and Mixed Numbers

Date_____ Period____

Find each product.

1) $-\frac{5}{4} \cdot \frac{1}{3}$

2) $\frac{8}{7} \cdot \frac{7}{10}$

3) $\frac{4}{9} \cdot \frac{7}{4}$

4) $-\frac{2}{3} \cdot \frac{5}{4}$

5) $-2 \cdot \frac{3}{7}$

6) $-2\frac{2}{3} \cdot 4\frac{1}{10}$

7) $-2\frac{1}{5} \cdot -1\frac{3}{4}$

8) $-1\frac{1}{4} \cdot 9$

9) $-1\frac{5}{7} \cdot -2\frac{1}{2}$

10) $-2\frac{3}{8} \cdot 2\frac{1}{2}$

Find each quotient.

11) $\frac{-1}{5} \div \frac{7}{4}$

12) $\frac{-1}{2} \div \frac{5}{4}$

13) $\frac{-3}{2} \div \frac{-10}{7}$

14) $\frac{1}{2} \div \frac{8}{7}$

15) $\frac{-9}{5} \div 2$

16) $-3\frac{5}{9} \div 3$

17) $-2 \div -3\frac{4}{5}$

18) $\frac{1}{9} \div -1\frac{1}{3}$

19) $1\frac{6}{7} \div 5\frac{3}{4}$

20) $-3\frac{7}{10} \div 2\frac{1}{4}$

 Name_____

Multiplying/Dividing Fractions and Mixed Numbers

Date_____ Period____

Find each product.

1) $-\frac{5}{4} \cdot \frac{1}{3}$

$-\frac{5}{12}$

2) $\frac{8}{7} \cdot \frac{7}{10}$

$\frac{4}{5}$

3) $\frac{4}{9} \cdot \frac{7}{4}$

$\frac{7}{9}$

4) $-\frac{2}{3} \cdot \frac{5}{4}$

$-\frac{5}{6}$

5) $-2 \cdot \frac{3}{7}$

$-\frac{6}{7}$

6) $-2\frac{2}{3} \cdot 4\frac{1}{10}$

$-10\frac{14}{15}$

7) $-2\frac{1}{5} \cdot -1\frac{3}{4}$

$3\frac{17}{20}$

8) $-1\frac{1}{4} \cdot 9$

$-11\frac{1}{4}$

9) $-1\frac{5}{7} \cdot -2\frac{1}{2}$

$4\frac{2}{7}$

10) $-2\frac{3}{8} \cdot 2\frac{1}{2}$

$-5\frac{15}{16}$

Find each quotient.

11) $\frac{-1}{5} \div \frac{7}{4}$

$-\frac{4}{35}$

12) $\frac{-1}{2} \div \frac{5}{4}$

$-\frac{2}{5}$

13) $\frac{-3}{2} \div \frac{-10}{7}$

$\frac{21}{20}$

14) $\frac{1}{2} \div \frac{8}{7}$

$\frac{7}{16}$

15) $\frac{-9}{5} \div 2$

$-\frac{9}{10}$

16) $-3\frac{5}{9} \div 3$

$-1\frac{5}{27}$

17) $-2 \div -3\frac{4}{5}$

$\frac{10}{19}$

18) $\frac{1}{9} \div -1\frac{1}{3}$

$-\frac{1}{12}$

19) $1\frac{6}{7} \div 5\frac{3}{4}$

$\frac{52}{161}$

20) $-3\frac{7}{10} \div 2\frac{1}{4}$

$-1\frac{29}{45}$

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Name_____

Order of Operations

Date_____ Period____

Evaluate each expression.

1) $(30 - 3) \div 3$

2) $(21 - 5) \div 8$

3) $1 + 7^2$

4) $5 \times 4 - 8$

5) $8 + 6 \times 9$

6) $3 + 17 \times 5$

7) $7 + 12 \times 11$

8) $15 + 40 \div 20$

9) $20 + 16 - 15$

10) $19 - 15 - 3$

11) $9 \times (3 + 3) \div 6$

12) $(9 + 18 - 3) \div 8$

13) $9 + 6 \div (8 - 2)$

14) $4(4 \div 2 + 4)$

15) $6 + (5 + 8) \times 4$

16) $6 \times 6 - (7 + 5)$

17) $(9 \times 2) \div (2 + 1)$

18) $2 - (4 + 3 - 6)$

19) $7 \times 7 - (8 - 2)$

20) $9 - 7 - 6 \div 6$

21) $(4 - 1 + 8 \div 8) \times 5$

22) $(10 \times 2) \div (1 + 1)$

23) $7 \times 9 - 7 - 3 \times 5$

24) $8 - 1 - (18 - 2) \div 8$

Name_____

Order of Operations

Date_____ Period____

Evaluate each expression.

1) $(30 - 3) \div 3$

9

2) $(21 - 5) \div 8$

2

3) $1 + 7^2$

50

4) $5 \times 4 - 8$

12

5) $8 + 6 \times 9$

62

6) $3 + 17 \times 5$

88

7) $7 + 12 \times 11$

139

8) $15 + 40 \div 20$

17

9) $20 + 16 - 15$

21

10) $19 - 15 - 3$

1

11) $9 \times (3 + 3) \div 6$

9

12) $(9 + 18 - 3) \div 8$

3

13) $9 + 6 \div (8 - 2)$

10

14) $4(4 \div 2 + 4)$

24

15) $6 + (5 + 8) \times 4$

58

16) $6 \times 6 - (7 + 5)$

24

17) $(9 \times 2) \div (2 + 1)$

6

18) $2 - (4 + 3 - 6)$

1

19) $7 \times 7 - (8 - 2)$

43

20) $9 - 7 - 6 \div 6$

1

21) $(4 - 1 + 8 \div 8) \times 5$

20

22) $(10 \times 2) \div (1 + 1)$

10

23) $7 \times 9 - 7 - 3 \times 5$

41

24) $8 - 1 - (18 - 2) \div 8$

5

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Name_____

Evaluating Variable Expressions

Date_____ Period____

Evaluate each using the values given.

1) $n^2 - m$; use $m = 7$, and $n = 8$

2) $8(x - y)$; use $x = 5$, and $y = 2$

3) $yx \div 2$; use $x = 7$, and $y = 2$

4) $m - n \div 4$; use $m = 5$, and $n = 8$

5) $x - y + 6$; use $x = 6$, and $y = 1$

6) $z + x^3$; use $x = 1$, and $z = 19$

7) $y + yx$; use $x = 15$, and $y = 8$

8) $q \div 6 + p$; use $p = 10$, and $q = 12$

9) $x + 8 - y$; use $x = 20$, and $y = 17$

10) $15 - (m + p)$; use $m = 3$, and $p = 10$

11) $10 - x + y \div 2$; use $x = 5$, and $y = 2$

12) $p - 2 + qp$; use $p = 7$, and $q = 4$

13) $zy + 4y$; use $y = 5$, and $z = 2$

14) $b(a + b) + a$; use $a = 9$, and $b = 4$

15) $p^2 \div 4 - m$; use $m = 3$, and $p = 4$

16) $x(y \div 3)^2$; use $x = 4$, and $y = 9$

17) $4 + m + n - m$; use $m = 4$, and $n = 9$

18) $qp + q - p$; use $p = 7$, and $q = 3$

19) $mn \div 6 + 10$; use $m = 7$, and $n = 6$

20) $h + j(j - h)$; use $h = 2$, and $j = 6$

21) $(b - 1)^2 + a^2$; use $a = 6$, and $b = 1$

22) $y(x - (9 - 4y))$; use $x = 4$, and $y = 2$

23) $x - (x - (x - y^3))$; use $x = 9$, and $y = 1$

24) $j(h - 9)^3 + 2$; use $h = 9$, and $j = 8$

Name_____

Evaluating Variable Expressions

Date_____ Period____

Evaluate each using the values given.

1) $n^2 - m$; use $m = 7$, and $n = 8$

57

2) $8(x - y)$; use $x = 5$, and $y = 2$

24

3) $yx \div 2$; use $x = 7$, and $y = 2$

7

4) $m - n \div 4$; use $m = 5$, and $n = 8$

3

5) $x - y + 6$; use $x = 6$, and $y = 1$

11

6) $z + x^3$; use $x = 1$, and $z = 19$

20

7) $y + yx$; use $x = 15$, and $y = 8$

128

8) $q \div 6 + p$; use $p = 10$, and $q = 12$

12

9) $x + 8 - y$; use $x = 20$, and $y = 17$

11

10) $15 - (m + p)$; use $m = 3$, and $p = 10$

2

11) $10 - x + y \div 2$; use $x = 5$, and $y = 2$

6

12) $p - 2 + qp$; use $p = 7$, and $q = 4$

33

13) $zy + 4y$; use $y = 5$, and $z = 2$

30

14) $b(a + b) + a$; use $a = 9$, and $b = 4$

61

15) $p^2 \div 4 - m$; use $m = 3$, and $p = 4$

1

16) $x(y \div 3)^2$; use $x = 4$, and $y = 9$

36

17) $4 + m + n - m$; use $m = 4$, and $n = 9$

13

18) $qp + q - p$; use $p = 7$, and $q = 3$

17

19) $mn \div 6 + 10$; use $m = 7$, and $n = 6$

17

20) $h + j(j - h)$; use $h = 2$, and $j = 6$

26

21) $(b - 1)^2 + a^2$; use $a = 6$, and $b = 1$

36

22) $y(x - (9 - 4y))$; use $x = 4$, and $y = 2$

6

23) $x - (x - (x - y^3))$; use $x = 9$, and $y = 1$

8

24) $j(h - 9)^3 + 2$; use $h = 9$, and $j = 8$

2

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Name_____

Simplifying Variable Expressions

Date_____ Period____

Simplify each expression.

1) $-3p + 6p$

2) $b - 3 + 6 - 2b$

3) $7x - x$

4) $7p - 10p$

5) $-10v + 6v$

6) $-9r + 10r$

7) $9 + 5r - 9r$

8) $1 - 3v + 10$

9) $5n + 9n$

10) $4b + 6 - 4$

11) $35n - 1 + 46$

12) $-33v - 49v$

13) $30n + 8n$

14) $7x + 31x$

15) $10x + 36 - 38x - 47$

16) $-2(7 - n) + 4$

17) $-8(-5b + 7) + 5b$

18) $-4p - (1 - 6p)$

19) $4 - 5(-4n + 3)$

20) $-7(k - 8) + 2k$

21) $1 + 7(1 - 3b)$

22) $3 - 8(7 - 5n)$

Name_____

Simplifying Variable Expressions

Date_____ Period____

Simplify each expression.

1) $-3p + 6p$

$3p$

2) $b - 3 + 6 - 2b$

$-b + 3$

3) $7x - x$

$6x$

4) $7p - 10p$

$-3p$

5) $-10v + 6v$

$-4v$

6) $-9r + 10r$

r

7) $9 + 5r - 9r$

$9 - 4r$

8) $1 - 3v + 10$

$11 - 3v$

9) $5n + 9n$

$14n$

10) $4b + 6 - 4$

$4b + 2$

11) $35n - 1 + 46$

$35n + 45$

12) $-33v - 49v$

$-82v$

13) $30n + 8n$

$38n$

14) $7x + 31x$

$38x$

15) $10x + 36 - 38x - 47$

$-28x - 11$

16) $-2(7 - n) + 4$

$-10 + 2n$

17) $-8(-5b + 7) + 5b$

$45b - 56$

18) $-4p - (1 - 6p)$

$2p - 1$

19) $4 - 5(-4n + 3)$

$-11 + 20n$

20) $-7(k - 8) + 2k$

$-5k + 56$

21) $1 + 7(1 - 3b)$

$8 - 21b$

22) $3 - 8(7 - 5n)$

$-53 + 40n$

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Name_____

One-Step Equations With Integers

Date_____ Period____

Solve each equation.

1) $v - 10 = -9$

2) $v - 10 = -3$

3) $x - 3 = 4$

4) $\frac{x}{5} = 2$

5) $22 = -11k$

6) $-13m = -377$

7) $b - 7 = -1$

8) $-8 = p - 13$

9) $-40 = -5p$

10) $418 = -22a$

11) $\frac{a}{29} = 5$

12) $-2 = \frac{m}{16}$

13) $x - 11 = 16$

14) $-10 = x - 21$

15) $20 = \frac{n}{4}$

16) $n - 29 = -53$

17) $-19 = b - 6$

18) $-8 = -16 + n$

19) $-9 + x = -26$

20) $29 + n = 13$

21) $21 = \frac{x}{18}$

22) $k + 1 = -27$

23) $6 = m - 16$

24) $5 = v + 29$

25) $168 = -84n$

26) $41k = -2747$

27) $\frac{x}{15} = 11$

28) $-71 = \frac{x}{64}$

Name_____

One-Step Equations With Integers

Date_____ Period____

Solve each equation.

1) $v - 10 = -9$

$\{1\}$

2) $v - 10 = -3$

$\{7\}$

3) $x - 3 = 4$

$\{7\}$

4) $\frac{x}{5} = 2$

$\{10\}$

5) $22 = -11k$

$\{-2\}$

6) $-13m = -377$

$\{29\}$

7) $b - 7 = -1$

$\{6\}$

8) $-8 = p - 13$

$\{5\}$

9) $-40 = -5p$

$\{8\}$

10) $418 = -22a$

$\{-19\}$

11) $\frac{a}{29} = 5$

$\{145\}$

12) $-2 = \frac{m}{16}$

$\{-32\}$

13) $x - 11 = 16$

$\{27\}$

14) $-10 = x - 21$

$\{11\}$

15) $20 = \frac{n}{4}$

$\{80\}$

16) $n - 29 = -53$

$\{-24\}$

17) $-19 = b - 6$

$\{-13\}$

18) $-8 = -16 + n$

$\{8\}$

19) $-9 + x = -26$

$\{-17\}$

20) $29 + n = 13$

$\{-16\}$

21) $21 = \frac{x}{18}$

$\{378\}$

22) $k + 1 = -27$

$\{-28\}$

23) $6 = m - 16$

$\{22\}$

24) $5 = v + 29$

$\{-24\}$

25) $168 = -84n$

$\{-2\}$

26) $41k = -2747$

$\{-67\}$

27) $\frac{x}{15} = 11$

$\{165\}$

28) $-71 = \frac{x}{64}$

$\{-4544\}$

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Name_____

One-Step Equations With Decimals

Date_____ Period____

Solve each equation.

1) $p + 8 = 14.1$

2) $n + 4.7 = -4.7$

3) $\frac{x}{1.2} = -7$

4) $n + 3.9 = 0.7$

5) $-6.3n = -8.19$

6) $32.663 = p + 11.363$

7) $n - 25.4 = -44.8$

8) $28.8 = 18x$

9) $x - 18 = -36.6$

10) $m - 21.1 = -36.6$

11) $\frac{x}{19.7} = 0.609137055838$

12) $-165.832 = -10.91k$

13) $\frac{a}{15.9} = -1.79245283019$

14) $n - 14.7 = 4.7$

15) $0.357142857143 = \frac{b}{4.2}$

16) $-38.48 = -5.2x$

17) $v + 6.6 = 32.1$

18) $\frac{p}{9.5} = 2.78947368421$

19) $-14.896 = r + 11.704$

20) $21.7 = m - 7.7$

21) $-1.55487804878 = \frac{n}{16.4}$

22) $n + 15.64 = -13.26$

23) $8.8 = m - 13.4$

24) $26.6 = v + 4.4$

25) $89.7x = -2296.32$

26) $-5704.74 = -73.8r$

27) $\frac{x}{41.6} = -2.34134615385$

28) $b - 43.4 = -120$

Name_____

One-Step Equations With Decimals

Date_____ Period____

Solve each equation.

1) $p + 8 = 14.1$

$\{6.1\}$

2) $n + 4.7 = -4.7$

$\{-9.4\}$

3) $\frac{x}{1.2} = -7$

$\{-8.4\}$

4) $n + 3.9 = 0.7$

$\{-3.2\}$

5) $-6.3n = -8.19$

$\{1.3\}$

6) $32.663 = p + 11.363$

$\{21.3\}$

7) $n - 25.4 = -44.8$

$\{-19.4\}$

8) $28.8 = 18x$

$\{1.6\}$

9) $x - 18 = -36.6$

$\{-18.6\}$

10) $m - 21.1 = -36.6$

$\{-15.5\}$

11) $\frac{x}{19.7} = 0.609137055838$

$\{12\}$

12) $-165.832 = -10.91k$

$\{15.2\}$

13) $\frac{a}{15.9} = -1.79245283019$

$\{-28.5\}$

14) $n - 14.7 = 4.7$

$\{19.4\}$

15) $0.357142857143 = \frac{b}{4.2}$

$\{1.5\}$

16) $-38.48 = -5.2x$

$\{7.4\}$

17) $v + 6.6 = 32.1$

$\{25.5\}$

18) $\frac{p}{9.5} = 2.78947368421$

$\{26.5\}$

19) $-14.896 = r + 11.704$

$\{-26.6\}$

20) $21.7 = m - 7.7$

$\{29.4\}$

21) $-1.55487804878 = \frac{n}{16.4}$

$\{-25.5\}$

22) $n + 15.64 = -13.26$

$\{-28.9\}$

23) $8.8 = m - 13.4$

$\{22.2\}$

24) $26.6 = v + 4.4$

$\{22.2\}$

25) $89.7x = -2296.32$

$\{-25.6\}$

26) $-5704.74 = -73.8r$

$\{77.3\}$

27) $\frac{x}{41.6} = -2.34134615385$

$\{-97.4\}$

28) $b - 43.4 = -120$

$\{-76.6\}$

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Name_____

One-Step Equations With Fractions

Date_____ Period____

Solve each equation.

1) $5\frac{1}{2} + p = 6$

2) $m - 1\frac{1}{2} = -\frac{5}{4}$

3) $-\frac{3}{4}b = 2$

4) $x - 3 = -5\frac{1}{2}$

5) $x - \frac{1}{2} = 1\frac{1}{4}$

6) $x - 1\frac{1}{4} = -6$

7) $2\frac{1}{10}n = 1\frac{1}{6}$

8) $9\frac{1}{3} = \frac{5}{3}n$

9) $5\frac{2}{7} + k = 2\frac{27}{70}$

10) $2\frac{5}{12} = -3\frac{1}{4} + k$

11) $m - \frac{4}{9} = -2\frac{67}{90}$

12) $\frac{11}{6} = \frac{1}{3} + p$

13) $1\frac{13}{64} = \frac{11}{8}v$

14) $\frac{39}{5} = 2m$

15) $n - \frac{3}{4} = -2\frac{3}{4}$

16) $\frac{9}{10}n = -1\frac{1}{10}$

17) $-1\frac{1}{2} + v = -3\frac{3}{10}$

18) $n - \frac{4}{7} = 3$

19) $\frac{9k}{65} = 1\frac{316}{845}$

20) $-\frac{9}{19} = n - 11$

21) $\frac{1}{3} = n + \frac{4}{3}$

22) $-\frac{26}{33} = \frac{13}{11}x$

Name_____

One-Step Equations With Fractions

Date_____ Period____

Solve each equation.

1) $5\frac{1}{2} + p = 6$

$\left\{\frac{1}{2}\right\}$

2) $m - 1\frac{1}{2} = -\frac{5}{4}$

$\left\{\frac{1}{4}\right\}$

3) $-\frac{3}{4}b = 2$

$\left\{-2\frac{2}{3}\right\}$

4) $x - 3 = -5\frac{1}{2}$

$\left\{-2\frac{1}{2}\right\}$

5) $x - \frac{1}{2} = 1\frac{1}{4}$

$\left\{1\frac{3}{4}\right\}$

6) $x - 1\frac{1}{4} = -6$

$\left\{-4\frac{3}{4}\right\}$

7) $2\frac{1}{10}n = 1\frac{1}{6}$

$\left\{\frac{5}{9}\right\}$

8) $9\frac{1}{3} = \frac{5}{3}n$

$\left\{5\frac{3}{5}\right\}$

9) $5\frac{2}{7} + k = 2\frac{27}{70}$

$\left\{-2\frac{9}{10}\right\}$

10) $2\frac{5}{12} = -3\frac{1}{4} + k$

$\left\{5\frac{2}{3}\right\}$

11) $m - \frac{4}{9} = -2\frac{67}{90}$

$\left\{-2\frac{3}{10}\right\}$

12) $\frac{11}{6} = \frac{1}{3} + p$

$\left\{1\frac{1}{2}\right\}$

13) $1\frac{13}{64} = \frac{11}{8}v$

$\left\{\frac{7}{8}\right\}$

14) $\frac{39}{5} = 2m$

$\left\{3\frac{9}{10}\right\}$

15) $n - \frac{3}{4} = -2\frac{3}{4}$

$\{-2\}$

16) $\frac{9}{10}n = -1\frac{1}{10}$

$\left\{-1\frac{2}{9}\right\}$

17) $-1\frac{1}{2} + v = -3\frac{3}{10}$

$\left\{-1\frac{4}{5}\right\}$

18) $n - \frac{4}{7} = 3$

$\left\{3\frac{4}{7}\right\}$

19) $\frac{9k}{65} = 1\frac{316}{845}$

$\left\{9\frac{12}{13}\right\}$

20) $-\frac{9}{19} = n - 11$

$\left\{10\frac{10}{19}\right\}$

21) $\frac{1}{3} = n + \frac{4}{3}$

$\{-1\}$

22) $-\frac{26}{33} = \frac{13}{11}x$

$\left\{-\frac{2}{3}\right\}$

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Name_____

One-Step Equation Word Problems

Date_____ Period____

1) Lisa is cooking muffins. The recipe calls for 7 cups of sugar. She has already put in 2 cups. How many more cups does she need to put in?

2) At a restaurant, Mike and his three friends decided to divide the bill evenly. If each person paid $13 then what was the total bill?

3) How many packages of diapers can you buy with $40 if one package costs $8?

4) Last Friday Trevon had $29. Over the weekend he received some money for cleaning the attic. He now has $41. How much money did he receive?

5) Last week Julia ran 30 miles more than Pranav. Julia ran 47 miles. How many miles did Pranav run?

6) How many boxes of envelopes can you buy with $12 if one box costs $3?

7) Amanda and her best friend found some money buried in a field. They split the money evenly, each getting $24.28. How much money did they find?

8) Jenny wants to buy an MP3 player that costs $30.98. How much change does she receive if she gives the cashier $40?

9) Last Friday Adam had \$22.33. Over the weekend he received some money for cleaning the attic. He now has \$32. How much money did he receive?

10) After paying \$5.12 for a salad, Norachai has \$27.10. How much money did he have before buying the salad?

11) A recipe for cookies calls for $3\frac{1}{4}$ cups of sugar. Amy has already put in $3\frac{1}{9}$ cups. How many more cups does she need to put in?

12) Your mother gave you \$13.32 with which to buy a present. This covered $\frac{3}{5}$ of the cost. How much did the present cost?

13) If the weight of a package is multiplied by $\frac{5}{7}$ the result is 40.5 pounds. Find the weight of the package.

14) A stray dog ate 12 of your muffins. That was $\frac{3}{10}$ of all of them! With how many did you start?

Name_____

One-Step Equation Word Problems

Date_____ Period____

1) Lisa is cooking muffins. The recipe calls for 7 cups of sugar. She has already put in 2 cups. How many more cups does she need to put in?

5

2) At a restaurant, Mike and his three friends decided to divide the bill evenly. If each person paid $13 then what was the total bill?

$52

3) How many packages of diapers can you buy with $40 if one package costs $8?

5

4) Last Friday Trevon had $29. Over the weekend he received some money for cleaning the attic. He now has $41. How much money did he receive?

$12

5) Last week Julia ran 30 miles more than Pranav. Julia ran 47 miles. How many miles did Pranav run?

17

6) How many boxes of envelopes can you buy with $12 if one box costs $3?

4

7) Amanda and her best friend found some money buried in a field. They split the money evenly, each getting $24.28. How much money did they find?

$48.56

8) Jenny wants to buy an MP3 player that costs $30.98. How much change does she receive if she gives the cashier $40?

$9.02

9) Last Friday Adam had \$22.33. Over the weekend he received some money for cleaning the attic. He now has \$32. How much money did he receive?

\$9.67

10) After paying \$5.12 for a salad, Norachai has \$27.10. How much money did he have before buying the salad?

\$32.22

11) A recipe for cookies calls for $3\frac{1}{4}$ cups of sugar. Amy has already put in $3\frac{1}{9}$ cups. How many more cups does she need to put in?

$\frac{5}{36}$

12) Your mother gave you \$13.32 with which to buy a present. This covered $\frac{3}{5}$ of the cost. How much did the present cost?

\$22.20

13) If the weight of a package is multiplied by $\frac{5}{7}$ the result is 40.5 pounds. Find the weight of the package.

56.7

14) A stray dog ate 12 of your muffins. That was $\frac{3}{10}$ of all of them! With how many did you start?

40

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Name_____

Two-Step Equations With Integers

Date_____ Period____

Solve each equation.

1) $\frac{r}{10} + 4 = 5$

2) $\frac{n}{2} + 5 = 3$

3) $3p - 2 = -29$

4) $1 - r = -5$

5) $\frac{k - 10}{2} = -7$

6) $\frac{n - 5}{2} = 5$

7) $-9 + \frac{n}{4} = -7$

8) $\frac{9 + m}{3} = 2$

9) $\frac{-5 + x}{22} = -1$

10) $4n - 9 = -9$

11) $\frac{x + 9}{2} = 3$

12) $\frac{-12 + x}{11} = -3$

13) $\frac{-4 + x}{2} = 6$

14) $-5 + \frac{n}{3} = 0$

15) $\frac{p}{4} + 8 = 7$

16) $9 + \frac{n}{4} = 15$

17) $6 + \frac{x}{2} = 4$

18) $\frac{b + 11}{3} = -2$

19) $\frac{a - 10}{3} = -4$

20) $-12r + 4 = 100$

21) $\frac{m}{16} - 9 = -8$

22) $-7 + 4r = -15$

23) $\frac{m - 13}{2} = -8$

24) $-5x + 13 = -17$

25) $\frac{k + 10}{-2} = 5$

26) $\frac{p + 8}{-2} = 10$

27) $-14r - 19 = 303$

28) $\frac{x}{-4} - 5 = -8$

Name_____

Two-Step Equations With Integers

Date_____ Period____

Solve each equation.

1) $\frac{r}{10} + 4 = 5$

$\{10\}$

2) $\frac{n}{2} + 5 = 3$

$\{-4\}$

3) $3p - 2 = -29$

$\{-9\}$

4) $1 - r = -5$

$\{6\}$

5) $\frac{k - 10}{2} = -7$

$\{-4\}$

6) $\frac{n - 5}{2} = 5$

$\{15\}$

7) $-9 + \frac{n}{4} = -7$

$\{8\}$

8) $\frac{9 + m}{3} = 2$

$\{-3\}$

9) $\frac{-5 + x}{22} = -1$

$\{-17\}$

10) $4n - 9 = -9$

$\{0\}$

11) $\frac{x + 9}{2} = 3$

$\{-3\}$

12) $\frac{-12 + x}{11} = -3$

$\{-21\}$

13) $\frac{-4 + x}{2} = 6$

$\{16\}$

14) $-5 + \frac{n}{3} = 0$

$\{15\}$

15) $\frac{p}{4} + 8 = 7$

$\{-4\}$

16) $9 + \frac{n}{4} = 15$

$\{24\}$

17) $6 + \frac{x}{2} = 4$

$\{-4\}$

18) $\frac{b + 11}{3} = -2$

$\{-17\}$

19) $\frac{a - 10}{3} = -4$

$\{-2\}$

20) $-12r + 4 = 100$

$\{-8\}$

21) $\frac{m}{16} - 9 = -8$

$\{16\}$

22) $-7 + 4r = -15$

$\{-2\}$

23) $\frac{m - 13}{2} = -8$

$\{-3\}$

24) $-5x + 13 = -17$

$\{6\}$

25) $\frac{k + 10}{-2} = 5$

$\{-20\}$

26) $\frac{p + 8}{-2} = 10$

$\{-28\}$

27) $-14r - 19 = 303$

$\{-23\}$

28) $\frac{x}{-4} - 5 = -8$

$\{12\}$

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Name_____

Two-Step Equations With Decimals

Date_____ Period____

Solve each equation.

1) $\frac{m}{2.8} - 4.9 = -7.11$

2) $0.4x + 3.9 = 5.78$

3) $\frac{-10.5 + m}{11.57} = -2.748$

4) $9.2r + 5.514 = 158.234$

5) $\frac{v}{10.44} - 2.9 = -4.422$

6) $-5.4 - 7.8x = -78.408$

7) $\frac{k - 2.6}{5.2} = -0.418$

8) $-8.38v + 10.71 = 131.382$

9) $\frac{2.8 + x}{3.1} = 2.709$

10) $\frac{n - 12.9}{6.1} = -0.377$

11) $\frac{-7.3 + r}{9.2} = -0.739$

12) $\frac{-13.3 + k}{11.796} = -0.296$

13) $\frac{12.1 + a}{4.9} = 7.071$

14) $-13.9 + \frac{b}{12.8} = -13.306$

15) $\frac{12.84 + x}{2.89} = -2.166$

16) $3.649 + 12.3v = 146.329$

17) $-3.8 - 13.4p = -460.606$

18) $\frac{r - 8.7}{3.6} = 3.722$

Name_____

Two-Step Equations With Decimals

Date_____ Period____

Solve each equation.

1) $\frac{m}{2.8} - 4.9 = -7.11$

$\{-6.188\}$

2) $0.4x + 3.9 = 5.78$

$\{4.7\}$

3) $\frac{-10.5 + m}{11.57} = -2.748$

$\{-21.29436\}$

4) $9.2r + 5.514 = 158.234$

$\{16.6\}$

5) $\frac{v}{10.44} - 2.9 = -4.422$

$\{-15.88968\}$

6) $-5.4 - 7.8x = -78.408$

$\{9.36\}$

7) $\frac{k - 2.6}{5.2} = -0.418$

$\{0.4264\}$

8) $-8.38v + 10.71 = 131.382$

$\{-14.4\}$

9) $\frac{2.8 + x}{3.1} = 2.709$

$\{5.5979\}$

10) $\frac{n - 12.9}{6.1} = -0.377$

$\{10.6003\}$

11) $\frac{-7.3 + r}{9.2} = -0.739$

$\{0.5012\}$

12) $\frac{-13.3 + k}{11.796} = -0.296$

$\{9.808384\}$

13) $\frac{12.1 + a}{4.9} = 7.071$

$\{22.5479\}$

14) $-13.9 + \frac{b}{12.8} = -13.306$

$\{7.6032\}$

15) $\frac{12.84 + x}{2.89} = -2.166$

$\{-19.09974\}$

16) $3.649 + 12.3v = 146.329$

$\{11.6\}$

17) $-3.8 - 13.4p = -460.606$

$\{34.09\}$

18) $\frac{r - 8.7}{3.6} = 3.722$

$\{22.0992\}$

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Name_____

Two-Step Equation Word Problems

Date_____ Period____

1) 331 students went on a field trip. Six buses were filled and 7 students traveled in cars. How many students were in each bus?

2) Aliyah had $24 to spend on seven pencils. After buying them she had $10. How much did each pencil cost?

3) The sum of three consecutive numbers is 72. What are the smallest of these numbers?

4) The sum of three consecutive even numbers is 48. What are the smallest of these numbers?

5) You bought a magazine for $5 and four erasers. You spent a total of $25. How much did each eraser cost?

6) Maria bought seven boxes. A week later half of all her boxes were destroyed in a fire. There are now only 22 boxes left. With how many did she start?

7) Sumalee won 40 super bouncy balls playing horseshoes at her school's game night. Later, she gave two to each of her friends. She only has 8 remaining. How many friends does she have?

8) Imani spent half of her weekly allowance playing mini-golf. To earn more money her parents let her wash the car for $4. What is her weekly allowance if she ended with $12?

9) Aliyah had some candy to give to her four children. She first took ten pieces for herself and then evenly divided the rest among her children. Each child received two pieces. With how many pieces did she start?

10) How old am I if 400 reduced by 2 times my age is 244?

11) Jill sold half of her comic books and then bought sixteen more. She now has 36. With how many did she begin?

12) For a field trip 4 students rode in cars and the rest filled nine buses. How many students were in each bus if 472 students were on the trip?

13) On Tuesday Shanice bought five hats. On Wednesday half of all the hats that she had were destroyed. On Thursday there were only 17 left. How many did she have on Monday?

14) The Cooking Club made some pies to sell at a basketball game to raise money for the new math books. The cafeteria contributed four pies to the sale. Each pie was then cut into five pieces and sold. There were a total of 60 pieces to sell. How many pies did the club make?

Name_____

Two-Step Equation Word Problems

Date_____ Period____

1) 331 students went on a field trip. Six buses were filled and 7 students traveled in cars. How many students were in each bus?

54

2) Aliyah had $24 to spend on seven pencils. After buying them she had $10. How much did each pencil cost?

$2

3) The sum of three consecutive numbers is 72. What are the smallest of these numbers?

23

4) The sum of three consecutive even numbers is 48. What are the smallest of these numbers?

14

5) You bought a magazine for $5 and four erasers. You spent a total of $25. How much did each eraser cost?

$5

6) Maria bought seven boxes. A week later half of all her boxes were destroyed in a fire. There are now only 22 boxes left. With how many did she start?

37

7) Sumalee won 40 super bouncy balls playing horseshoes at her school's game night. Later, she gave two to each of her friends. She only has 8 remaining. How many friends does she have?

16

8) Imani spent half of her weekly allowance playing mini-golf. To earn more money her parents let her wash the car for $4. What is her weekly allowance if she ended with $12?

$16

9) Aliyah had some candy to give to her four children. She first took ten pieces for herself and then evenly divided the rest among her children. Each child received two pieces. With how many pieces did she start?

18

10) How old am I if 400 reduced by 2 times my age is 244?

78

11) Jill sold half of her comic books and then bought sixteen more. She now has 36. With how many did she begin?

40

12) For a field trip 4 students rode in cars and the rest filled nine buses. How many students were in each bus if 472 students were on the trip?

52

13) On Tuesday Shanice bought five hats. On Wednesday half of all the hats that she had were destroyed. On Thursday there were only 17 left. How many did she have on Monday?

29

14) The Cooking Club made some pies to sell at a basketball game to raise money for the new math books. The cafeteria contributed four pies to the sale. Each pie was then cut into five pieces and sold. There were a total of 60 pieces to sell. How many pies did the club make?

8

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Name_____

Multi-Step Equations

Date_____ Period____

Solve each equation.

1) $6a + 5a = -11$

2) $-6n - 2n = 16$

3) $4x + 6 + 3 = 17$

4) $0 = -5n - 2n$

5) $6r - 1 + 6r = 11$

6) $r + 11 + 8r = 29$

7) $-10 = -14v + 14v$

8) $-10p + 9p = 12$

9) $42 = 8m + 13m$

10) $a - 2 + 3 = -2$

11) $18 = 3(3x - 6)$

12) $30 = -5(6n + 6)$

13) $37 = -3 + 5(x + 6)$

14) $-13 = 5(1 + 4m) - 2m$

15) $4(-x + 4) = 12$

16) $-2 = -(n - 8)$

17) $-6(1 - 5v) = 54$

18) $8 = 8v - 4(v + 8)$

19) $10(1 + 3b) = -20$

20) $-5n - 8(1 + 7n) = -8$

21) $8(4k - 4) = -5k - 32$

22) $-8(-8x - 6) = -6x - 22$

23) $8(1 + 5x) + 5 = 13 + 5x$

24) $-11 - 5a = 6(5a + 4)$

25) $-5(4x-2)=-2(3+6x)$

26) $5(2x+6)=-4(-5-2x)+3x$

Name_____

Multi-Step Equations

Date_____ Period____

Solve each equation.

1) $6a + 5a = -11$

$\{-1\}$

2) $-6n - 2n = 16$

$\{-2\}$

3) $4x + 6 + 3 = 17$

$\{2\}$

4) $0 = -5n - 2n$

$\{0\}$

5) $6r - 1 + 6r = 11$

$\{1\}$

6) $r + 11 + 8r = 29$

$\{2\}$

7) $-10 = -14v + 14v$

No solution.

8) $-10p + 9p = 12$

$\{-12\}$

9) $42 = 8m + 13m$

$\{2\}$

10) $a - 2 + 3 = -2$

$\{-3\}$

11) $18 = 3(3x - 6)$

$\{4\}$

12) $30 = -5(6n + 6)$

$\{-2\}$

13) $37 = -3 + 5(x + 6)$

$\{2\}$

14) $-13 = 5(1 + 4m) - 2m$

$\{-1\}$

15) $4(-x + 4) = 12$

$\{1\}$

16) $-2 = -(n - 8)$

$\{10\}$

17) $-6(1 - 5v) = 54$

$\{2\}$

18) $8 = 8v - 4(v + 8)$

$\{10\}$

19) $10(1 + 3b) = -20$

$\{-1\}$

20) $-5n - 8(1 + 7n) = -8$

$\{0\}$

21) $8(4k - 4) = -5k - 32$

$\{0\}$

22) $-8(-8x - 6) = -6x - 22$

$\{-1\}$

23) $8(1 + 5x) + 5 = 13 + 5x$

$\{0\}$

24) $-11 - 5a = 6(5a + 4)$

$\{-1\}$

25) $-5(4x-2)=-2(3+6x)$

$\{2\}$

26) $5(2x+6)=-4(-5-2x)+3x$

$\{10\}$

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Kuta Software - Infinite Pre-Algebra

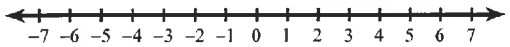
Name_____

Inequalities and Their Graphs

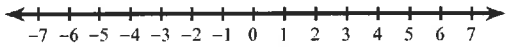
Date_____ Period____

Draw a graph for each inequality.

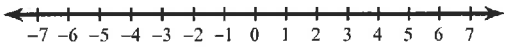
1) $x \leq 1$



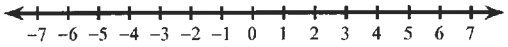
2) $m > -2$



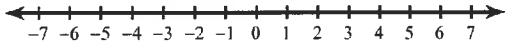
3) $x \leq 4$



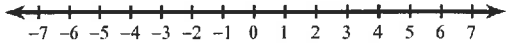
4) $m > -6$



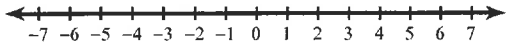
5) $-5 \geq a$



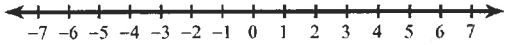
6) $4 \geq x$



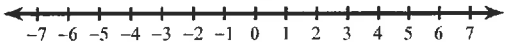
7) $-2 < b$



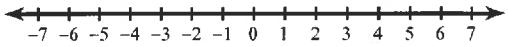
8) $1 > x$



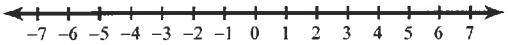
9) $-r \leq -2$



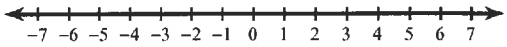
10) $4 \leq -n$



11) $-n \leq -5$

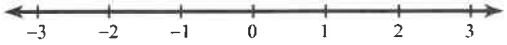


12) $1 < -x$

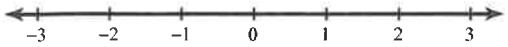


13) $n \geq \frac{3}{2}$

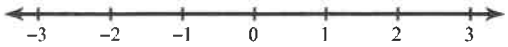
14) $k < 2$



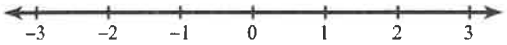
15) $p \geq -1\frac{1}{2}$



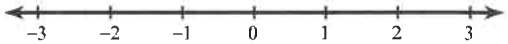
16) $n \geq 1$



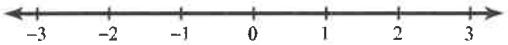
17) $x \geq -2$



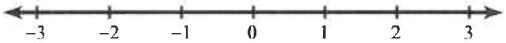
18) $-2\frac{1}{2} \leq n$



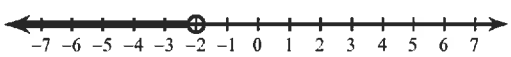
19) $-1\frac{1}{2} > -n$

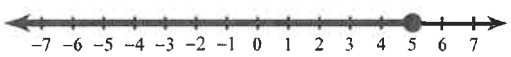


20) $-1\frac{1}{2} \geq v$

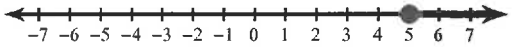


Write an inequality for each graph.

21) 

22) 

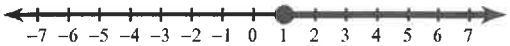
23) 

24) 

25) 

26) 

27) 

28) 

Kuta Software - Infinite Pre-Algebra

Name_____

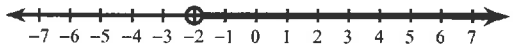
Inequalities and Their Graphs

Date_____ Period____

Draw a graph for each inequality.

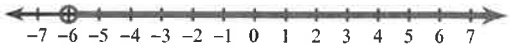
1) $x \leq 1$

2) $m > -2$

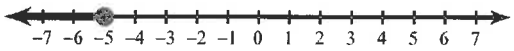


3) $x \leq 4$

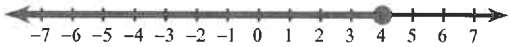
4) $m > -6$



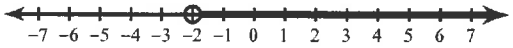
5) $-5 \geq a$



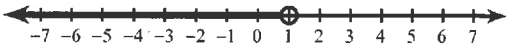
6) $4 \geq x$



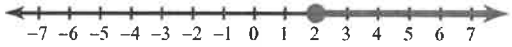
7) $-2 < b$



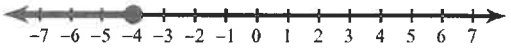
8) $1 > x$



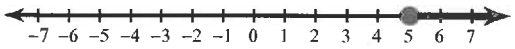
9) $-r \leq -2$



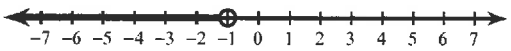
10) $4 \leq -n$



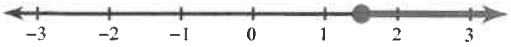
11) $-n \leq -5$



12) $1 < -x$



13) $n \geq \frac{3}{2}$



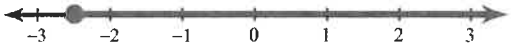
14) $k < 2$

15) $p \geq -1\frac{1}{2}$

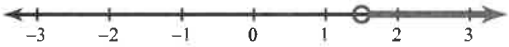
16) $n \geq 1$

17) $x \geq -2$

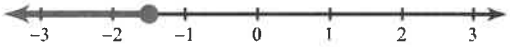
18) $-2\frac{1}{2} \leq n$



19) $-1\frac{1}{2} > -n$

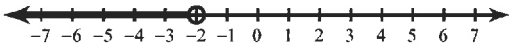


20) $-1\frac{1}{2} \geq v$



Write an inequality for each graph.

21)



$a < -2$

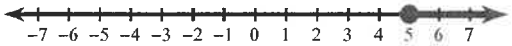
22)

$x \leq 5$

23)

$b > -5$

24)



$x \geq 5$

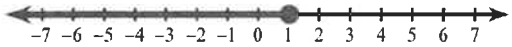
25)

$b > -2$

26)

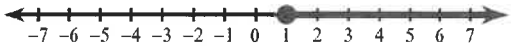
$a \geq -5$

27)



$x \leq 1$

28)



$x \geq 1$

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

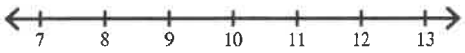
Name_____

Solving One-Step Inequalities by Adding/Subtracting

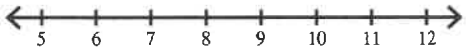
Date_____ Period____

Solve each inequality and graph its solution.

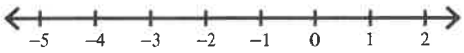
1) $x + 8 \geq 18$



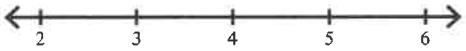
2) $x - 1 > 6$



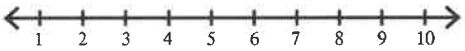
3) $-7 + x \geq -8$



4) $x - 1 \leq 3$



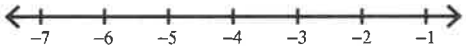
5) $n - 2 \leq 4$



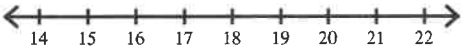
6) $v - 1 < 3$

7) $-18 + n < -7$

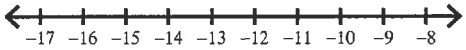
8) $r + 13 < 9$



9) $n - 4 \geq 13$



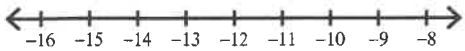
10) $p + 8 > -4$



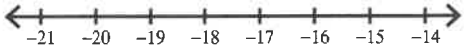
11) $17 + k \leq 10$

12) $-2 + x \leq -16$

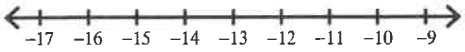
13) $-28 < v - 16$



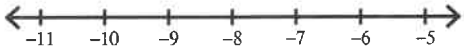
14) $n - 2 > -20$



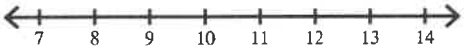
15) $x - 7 < -20$



16) $x + 13 \geq 5$

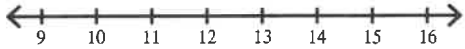


17) $x - 10 > -1$

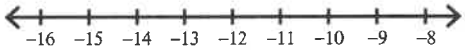


18) $x - 12 < -11$

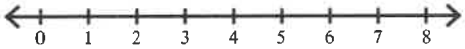
19) $r - 2 > 11$



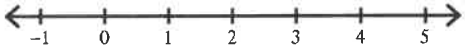
20) $9 + n > -4$



21) $20 \geq p + 16$



22) $11 \geq 8 + n$

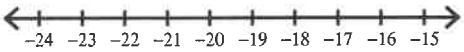


23) $6 > -11 + a$

24) $p - 6 \geq -3$

25) $n - 83 > -166$

26) $-3 \geq x + 16$



Kuta Software - Infinite Pre-Algebra

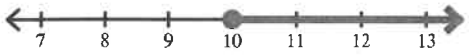
Name_____

Solving One-Step Inequalities by Adding/Subtracting

Date_____ Period____

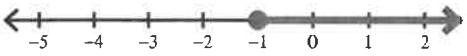
Solve each inequality and graph its solution.

1) $x + 8 \geq 18$



2) $x - 1 > 6$

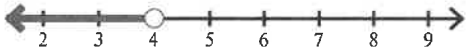
3) $-7 + x \geq -8$



4) $x - 1 \leq 3$

5) $n - 2 \leq 4$

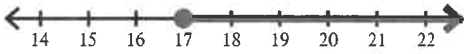
6) $v - 1 < 3$



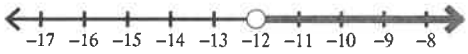
7) $-18 + n < -7$

8) $r + 13 < 9$

9) $n - 4 \geq 13$

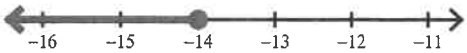


10) $p + 8 > -4$

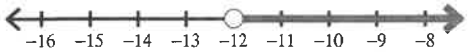


11) $17 + k \leq 10$

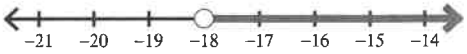
12) $-2 + x \leq -16$



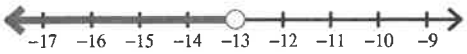
13) $-28 < v - 16$



14) $n - 2 > -20$

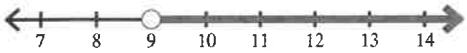


15) $x - 7 < -20$

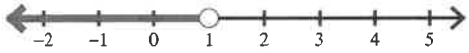


16) $x + 13 \geq 5$

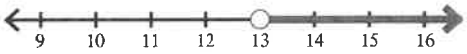
17) $x - 10 > -1$



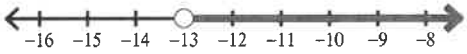
18) $x - 12 < -11$



19) $r - 2 > 11$

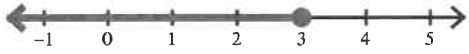


20) $9 + n > -4$



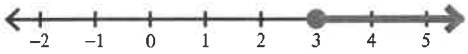
21) $20 \geq p + 16$

22) $11 \geq 8 + n$



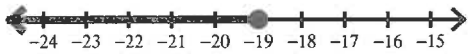
23) $6 > -11 + a$

24) $p - 6 \geq -3$



25) $n - 83 > -166$

26) $-3 \geq x + 16$



Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

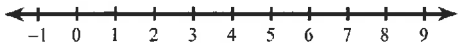
Name_____

Solving One-Step Inequalities by Multiplying/Dividing

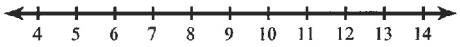
Date_____ Period____

Solve each inequality and graph its solution.

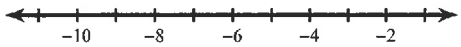
1) $-4m \geq -4$



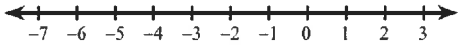
2) $\frac{n}{5} \leq 2$



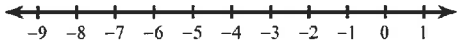
3) $-4r > 16$



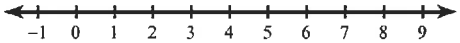
4) $\frac{n}{2} < 0$



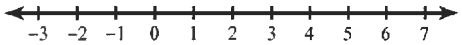
5) $\frac{x}{5} \leq -\frac{3}{5}$



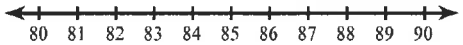
6) $\frac{x}{2} \geq 3$



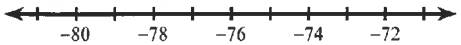
7) $14v \leq 14$



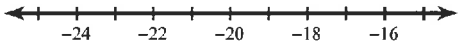
8) $\frac{b}{6} > 14$



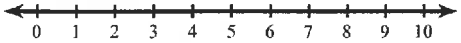
9) $\frac{a}{6} < -13$



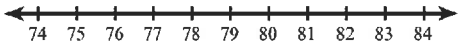
10) $\frac{n}{3} \geq -6$



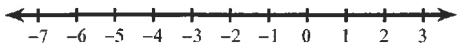
11) $-10x < -80$



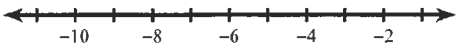
12) $\frac{k}{13} \leq 6$



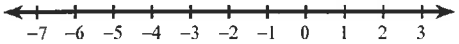
13) $4x \geq -20$



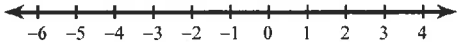
14) $60 < -10a$



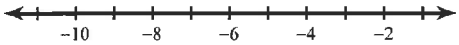
15) $8 > 8n$



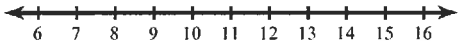
16) $0 \geq -2p$



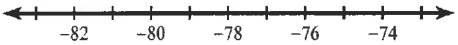
17) $24 \geq -4n$



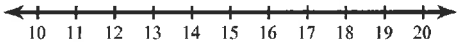
18) $4x \leq 40$



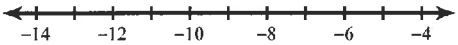
19) $-10 < \frac{r}{8}$



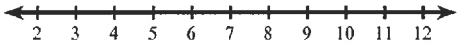
20) $\frac{m}{3} \leq 5$



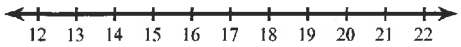
21) $-2 \geq \frac{n}{3}$



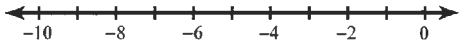
22) $\frac{7}{3} \leq \frac{p}{3}$



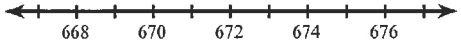
23) $\frac{b}{2} < 7$



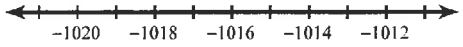
24) $-12 < 3x$



25) $42 > \frac{x}{16}$



26) $\frac{v}{29} \geq -35$



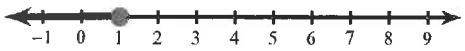
Name_____

Solving One-Step Inequalities by Multiplying/Dividing

Date_____ Period____

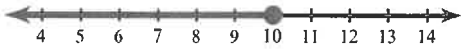
Solve each inequality and graph its solution.

1) $-4m \geq -4$



$m \leq 1$

2) $\frac{n}{5} \leq 2$

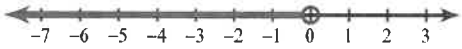


$n \leq 10$

3) $-4r > 16$

$r < -4$

4) $\frac{n}{2} < 0$

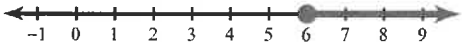


$n < 0$

5) $\frac{x}{5} \leq -\frac{3}{5}$

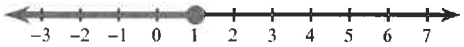
$x \leq -3$

6) $\frac{x}{2} \geq 3$



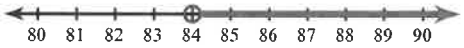
$x \geq 6$

7) $14v \leq 14$



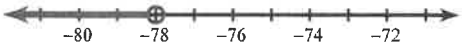
$v \leq 1$

8) $\frac{b}{6} > 14$



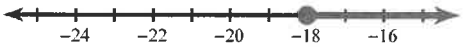
$b > 84$

9) $\frac{a}{6} < -13$



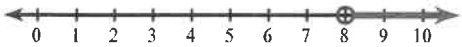
$a < -78$

10) $\frac{n}{3} \geq -6$



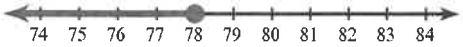
$n \geq -18$

11) $-10x < -80$



$x > 8$

12) $\frac{k}{13} \leq 6$



$k \leq 78$

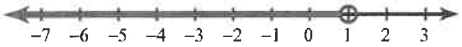
13) $4x \geq -20$

$x \geq -5$

14) $60 < -10a$

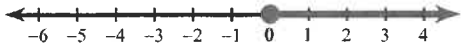
$a < -6$

15) $8 > 8n$



$n < 1$

16) $0 \geq -2p$

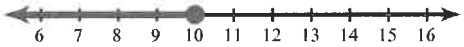


$p \geq 0$

17) $24 \geq -4n$

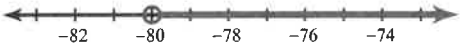
$n \geq -6$

18) $4x \leq 40$



$x \leq 10$

19) $-10 < \frac{r}{8}$



$r > -80$

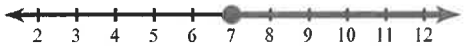
20) $\frac{m}{3} \leq 5$

$m \leq 15$

21) $-2 \geq \frac{n}{3}$

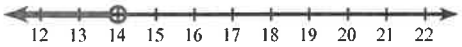
$n \leq -6$

22) $\frac{7}{3} \leq \frac{p}{3}$



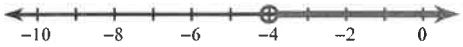
$p \geq 7$

23) $\frac{b}{2} < 7$



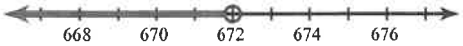
$b < 14$

24) $-12 < 3x$



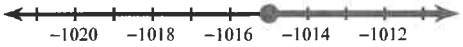
$x > -4$

25) $42 > \frac{x}{16}$



$x < 672$

26) $\frac{v}{29} \geq -35$



$v \geq -1015$

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Kuta Software - Infinite Pre-Algebra

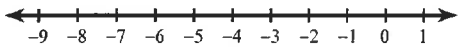
Name_____

Solving Two-Step Inequalities

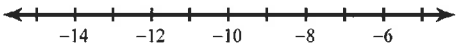
Date_____ Period____

Solve each inequality and graph its solution.

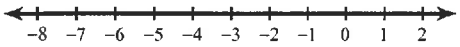
1) $\frac{n}{3} + 2 > 0$



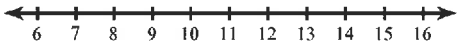
2) $\frac{p}{9} - 1 \le -2$



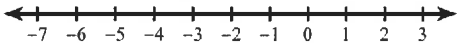
3) $\frac{x}{1} + 5 > 5$



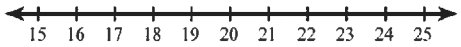
4) $\frac{1+m}{9} \ge 1$



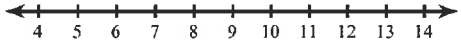
5) $-2r - 2 \le 4$



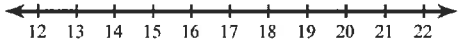
6) $8x + 2 \le 138$



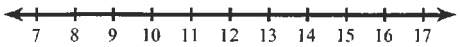
7) $3 + \frac{b}{9} < 4$



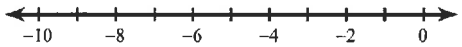
8) $9 + \frac{n}{2} > 16$



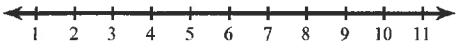
9) $-7v + 5 \geq -79$



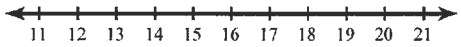
10) $\frac{n+3}{2} > -2$



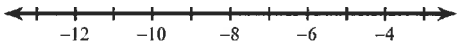
11) $4 > \frac{a+1}{2}$



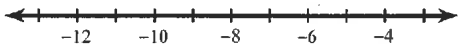
12) $-2 + \frac{x}{2} > 6$



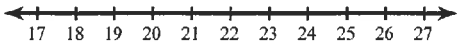
13) $60 > 5 - 5n$



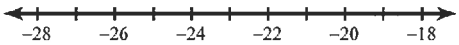
14) $\frac{x+1}{2} \geq -4$



15) $6 \leq 5 + \frac{p}{20}$



16) $-18 + \frac{k}{3} \leq -26$



Name_____

Solving Two-Step Inequalities

Date_____ Period____

Solve each inequality and graph its solution.

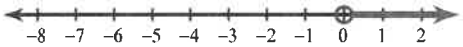
1) $\frac{n}{3} + 2 > 0$

$n > -6$

2) $\frac{p}{9} - 1 \le -2$

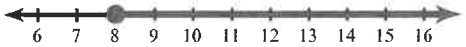
$p \le -9$

3) $\frac{x}{1} + 5 > 5$



$x > 0$

4) $\frac{1 + m}{9} \ge 1$

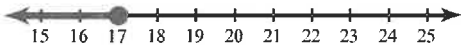


$m \ge 8$

5) $-2r - 2 \le 4$

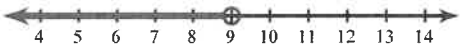
$r \ge -3$

6) $8x + 2 \le 138$



$x \le 17$

7) $3 + \frac{b}{9} < 4$



$b < 9$

8) $9 + \frac{n}{2} > 16$

$n > 14$

9) $-7v + 5 \geq -79$

$v \leq 12$

10) $\frac{n+3}{2} > -2$

$n > -7$

11) $4 > \frac{a+1}{2}$

$a < 7$

12) $-2 + \frac{x}{2} > 6$

$x > 16$

13) $60 > 5 - 5n$

$n > -11$

14) $\frac{x+1}{2} \geq -4$

$x \geq -9$

15) $6 \leq 5 + \frac{p}{20}$

$p \geq 20$

16) $-18 + \frac{k}{3} \leq -26$

$k \leq -24$

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Kuta Software - Infinite Pre-Algebra

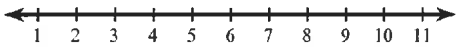
Name_____

Solving Multi-Step Inequalities

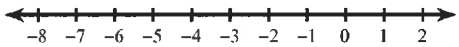
Date_____ Period____

Solve each inequality and graph its solution.

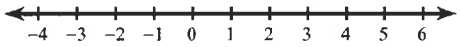
1) $-11 \geq 6 - 2n - 5$



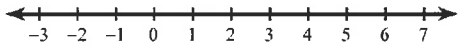
2) $0 > -5x - 6x$



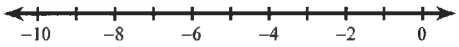
3) $x + 1 + 4 \leq 9$



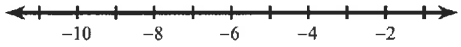
4) $-9 > -5n - 4n$



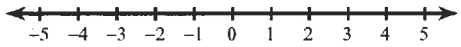
5) $5k - 2k > -9$



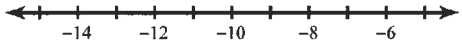
6) $-2 \geq 4p + 6 + 4$



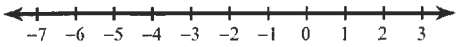
7) $30 - 6a < -3(5 + 7a)$



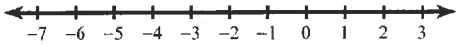
8) $33 + 4x \leq -(x + 7)$



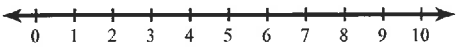
9) $2(6+4n) \geq 12 - 8n$



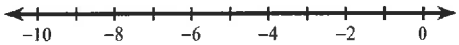
10) $-5(2b+7) + b < -b - 11$



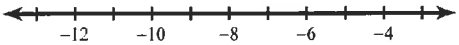
11) $-33 - n \leq -3(2n+1)$



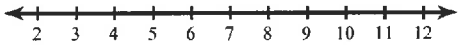
12) $-3(-7p-6) - 7 < p - 29$



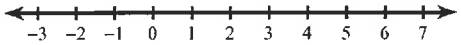
13) $-x + 23 < 2 - 2(x-8)$



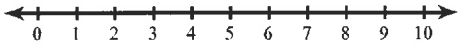
14) $32 - 5n \geq 7 - 5(n-5)$



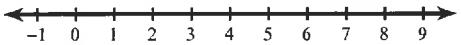
15) $12(10b-9) > -12(9+8b)$



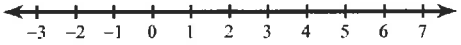
16) $-2(k-12) - 5(k+2) < -9k + 4k$



17) $8(1+8x) + 8(x-11) < -10x + 2x$



18) $-2(9r+3) - 7r \geq -10r - (12r+9)$



Kuta Software - Infinite Pre-Algebra

Name_____

Solving Multi-Step Inequalities

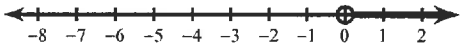
Date_____ Period____

Solve each inequality and graph its solution.

1) $-11 \geq 6 - 2n - 5$

$n \geq 6$

2) $0 > -5x - 6x$



$x > 0$

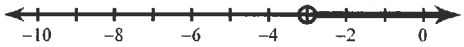
3) $x + 1 + 4 \leq 9$

$x \leq 4$

4) $-9 > -5n - 4n$

$n > 1$

5) $5k - 2k > -9$

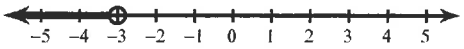


$k > -3$

6) $-2 \geq 4p + 6 + 4$

$p \leq -3$

7) $30 - 6a < -3(5 + 7a)$

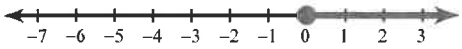


$a < -3$

8) $33 + 4x \leq -(x + 7)$

$x \leq -8$

9) $2(6+4n) \geq 12-8n$



$n \geq 0$

10) $-5(2b+7)+b < -b-11$

$b > -3$

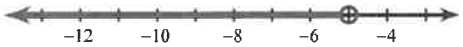
11) $-33-n \leq -3(2n+1)$

$n \leq 6$

12) $-3(-7p-6)-7 < p-29$

$p < -2$

13) $-x+23 < 2-2(x-8)$



$x < -5$

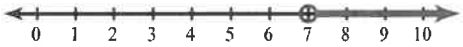
14) $32-5n \geq 7-5(n-5)$

{ All real numbers. }

15) $12(10b-9) > -12(9+8b)$

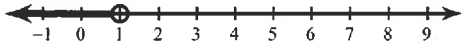
$b > 0$

16) $-2(k-12)-5(k+2) < -9k+4k$



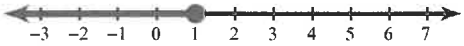
$k > 7$

17) $8(1+8x)+8(x-11) < -10x+2x$



$x < 1$

18) $-2(9r+3)-7r \geq -10r-(12r+9)$



$r \leq 1$

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Name_____

Exponents and Multiplication

Date_____ Period____

Simplify. Your answer should contain only positive exponents.

1) $4^2 \cdot 4^2$

2) $4 \cdot 4^2$

3) $3^2 \cdot 3^2$

4) $2 \cdot 2^2 \cdot 2^2$

5) $2n^4 \cdot 5n^4$

6) $6r \cdot 5r^2$

7) $2n^4 \cdot 6n^4$

8) $6k^2 \cdot k$

9) $5b^2 \cdot 8b$

10) $4x^2 \cdot 3x$

11) $6x \cdot 2x^2$

12) $6x \cdot 6x^3$

13) $7v^3 \cdot 10u^3v^5 \cdot 8uv^3$

14) $9xy^2 \cdot 9x^5y^2$

15) $6m^3n^3 \cdot 8m^2n^3$

16) $6x^2 \cdot 6x^3y^4$

17) $7u^2v^5 \cdot 9uv^3$

18) $uv \cdot 4uv^5$

19) $10xy^3 \cdot 8x^5y^3$

20) $3u^4v^5 \cdot 7u^2v^3$

21) $(2x^2)^2$

22) $(p^4)^4$

23) $(k^3)^4$

24) $(7k)^2$

25) $(x^2)^3$

26) $(2b^2)^4$

Name_____

Exponents and Multiplication

Date_____ Period____

Simplify. Your answer should contain only positive exponents.

1) $4^2 \cdot 4^2$

4^4

2) $4 \cdot 4^2$

4^3

3) $3^2 \cdot 3^2$

3^4

4) $2 \cdot 2^2 \cdot 2^2$

2^5

5) $2n^4 \cdot 5n^4$

$10n^8$

6) $6r \cdot 5r^2$

$30r^3$

7) $2n^4 \cdot 6n^4$

$12n^8$

8) $6k^2 \cdot k$

$6k^3$

9) $5b^2 \cdot 8b$

$40b^3$

10) $4x^2 \cdot 3x$

$12x^3$

11) $6x \cdot 2x^2$

$12x^3$

12) $6x \cdot 6x^3$

$36x^4$

13) $7v^3 \cdot 10u^3v^5 \cdot 8uv^3$

$560v^{11}u^4$

14) $9xy^2 \cdot 9x^5y^2$

$81x^6y^4$

15) $6m^3n^3 \cdot 8m^2n^3$

$48m^5n^6$

16) $6x^2 \cdot 6x^3y^4$

$36x^5y^4$

17) $7u^2v^5 \cdot 9uv^3$

$63u^3v^8$

18) $uv \cdot 4uv^5$

$4u^2v^6$

19) $10xy^3 \cdot 8x^5y^3$

$80x^6y^6$

20) $3u^4v^5 \cdot 7u^2v^3$

$21u^6v^8$

21) $(2x^2)^2$

$4x^4$

22) $(p^4)^4$

p^{16}

23) $(k^3)^4$

k^{12}

24) $(7k)^2$

$49k^2$

25) $(x^2)^3$

x^6

26) $(2b^2)^4$

$16b^8$

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Name_____

Exponents and Division

Date_____ Period____

Simplify. Your answer should contain only positive exponents.

1) $\frac{5^4}{5}$

2) $\frac{3}{3^3}$

3) $\frac{2^2}{2^3}$

4) $\frac{2^4}{2^2}$

5) $\frac{3r^3}{2r}$

6) $\frac{7k^2}{4k^3}$

7) $\frac{10p^4}{6p}$

8) $\frac{3b}{10b^3}$

9) $\frac{8m^3}{10m^3}$

10) $\frac{7n^3}{2n^5}$

11) $\frac{2n^2}{n}$

12) $\frac{8x^3}{10x^5}$

13) $\frac{12x^3}{9y^8}$

14) $\frac{14x^4y^7}{6x^5y^4}$

15) $\frac{11u^4}{17u^7v^9}$

16) $\frac{4y^4}{14yx^8}$

17) $\frac{12yx^4}{10yx^8}$

18) $\frac{18x^8y^8}{10x^3}$

19) $\frac{5n^8}{20n^8}$

20) $\frac{16yx^4}{9x^8y^2}$

Name_____

Exponents and Division

Date_____ Period____

Simplify. Your answer should contain only positive exponents.

1) $\frac{5^4}{5}$

5^3

2) $\frac{3}{3^3}$

$\frac{1}{3^2}$

3) $\frac{2^2}{2^3}$

$\frac{1}{2}$

4) $\frac{2^4}{2^2}$

2^2

5) $\frac{3r^3}{2r}$

$\frac{3r^2}{2}$

6) $\frac{7k^2}{4k^3}$

$\frac{7}{4k}$

7) $\frac{10p^4}{6p}$

$\frac{5p^3}{3}$

8) $\frac{3b}{10b^3}$

$\frac{3}{10b^2}$

9) $\frac{8m^3}{10m^3}$

$\frac{4}{5}$

10) $\frac{7n^3}{2n^5}$

$\frac{7}{2n^2}$

11) $\frac{2n^2}{n}$

$2n$

12) $\frac{8x^3}{10x^5}$

$\frac{4}{5x^2}$

13) $\frac{12x^3}{9y^8}$

$\frac{4x^3}{3y^8}$

14) $\frac{14x^4y^7}{6x^5y^4}$

$\frac{7y^3}{3x}$

15) $\frac{11u^4}{17u^7v^9}$

$\frac{11}{17u^3v^9}$

16) $\frac{4y^4}{14yx^8}$

$\frac{2y^3}{7x^8}$

17) $\frac{12yx^4}{10yx^8}$

$\frac{6}{5x^4}$

18) $\frac{18x^8y^8}{10x^3}$

$\frac{9x^5y^8}{5}$

19) $\frac{5n^8}{20n^8}$

$\frac{1}{4}$

20) $\frac{16yx^4}{9x^8y^2}$

$\frac{16}{9x^4y}$

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Name_____

Powers of Products and Quotients

Date_____ Period____

Simplify. Your answer should contain only positive exponents.

1) $(3a^2)^3$

2) $(2n^4)^4$

3) $(3x^4)^4$

4) $(6b^2)^2$

5) $(7y^4)^2$

6) $(3ab^4)^4$

7) $(2x^4y^4)^3$

8) $(5mn^3)^3$

9) $(x^2y^2)^2$

10) $(6yx^4)^2$

11) $(u^4v^3)^2$

12) $(2x^4y^4)^4$

13) $(3x^2 \cdot 2x^2)^2$

14) $(2p^3 \cdot 2p)^2$

15) $(4n^3 \cdot n^2)^2$

16) $(3x \cdot 2x)^2$

17) $(4x^4 \cdot x^4)^3$

18) $(4n^4 \cdot n)^2$

Name_____

Powers of Products and Quotients

Date_____ Period____

Simplify. Your answer should contain only positive exponents.

1) $(3a^2)^3$

$27a^6$

2) $(2n^4)^4$

$16n^{16}$

3) $(3x^4)^4$

$81x^{16}$

4) $(6b^2)^2$

$36b^4$

5) $(7y^4)^2$

$49y^8$

6) $(3ab^4)^4$

$81a^4b^{16}$

7) $(2x^4y^4)^3$

$8x^{12}y^{12}$

8) $(5mn^3)^3$

$125m^3n^9$

9) $(x^2y^2)^2$

x^4y^4

10) $(6yx^4)^2$

$36y^2x^8$

11) $(u^4v^3)^2$

u^8v^6

12) $(2x^4y^4)^4$

$16x^{16}y^{16}$

13) $(3x^2 \cdot 2x^2)^2$

$36x^8$

14) $(2p^3 \cdot 2p)^2$

$16p^8$

15) $(4n^3 \cdot n^2)^2$

$16n^{10}$

16) $(3x \cdot 2x)^2$

$36x^4$

17) $(4x^4 \cdot x^4)^3$

$64x^{24}$

18) $(4n^4 \cdot n)^2$

$16n^{10}$

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Name_____

Square Roots

Date_____ Period____

Find each square root.

1) $\sqrt{64}$

2) $\sqrt{36}$

3) $\sqrt{49}$

4) $\sqrt{0}$

5) $\sqrt{25}$

6) $\sqrt{1}$

7) $\sqrt{9}$

8) $\sqrt{4}$

Find each square root. Round to the nearest whole number.

9) $-\sqrt{200}$

10) $\sqrt{144}$

11) $-\sqrt{80}$

12) $-\sqrt{34}$

13) $-\sqrt{127}$

14) $\sqrt{1}$

15) $-\sqrt{36}$

16) $-\sqrt{148}$

Find each square root.

17) $-\sqrt{\frac{1}{4}}$

18) $\sqrt{\frac{81}{121}}$

19) $\sqrt{\frac{49}{196}}$

20) $\sqrt{\frac{81}{49}}$

21) $-\sqrt{\frac{25}{196}}$

22) $-\sqrt{\frac{196}{225}}$

Name_____

Square Roots

Date_____ Period____

Find each square root.

1) $\sqrt{64}$

8

2) $\sqrt{36}$

6

3) $\sqrt{49}$

7

4) $\sqrt{0}$

0

5) $\sqrt{25}$

5

6) $\sqrt{1}$

1

7) $\sqrt{9}$

3

8) $\sqrt{4}$

2

Find each square root. Round to the nearest whole number.

9) $-\sqrt{200}$

-14

10) $\sqrt{144}$

12

11) $-\sqrt{80}$

-9

12) $-\sqrt{34}$

-6

13) $-\sqrt{127}$

-11

14) $\sqrt{1}$

1

15) $-\sqrt{36}$

-6

16) $-\sqrt{148}$

-12

Find each square root.

17) $-\sqrt{\frac{1}{4}}$

$-\frac{1}{2}$

18) $\sqrt{\frac{81}{121}}$

$\frac{9}{11}$

19) $\sqrt{\frac{49}{196}}$

$\frac{1}{2}$

20) $\sqrt{\frac{81}{49}}$

$1\frac{2}{7}$

21) $-\sqrt{\frac{25}{196}}$

$-\frac{5}{14}$

22) $-\sqrt{\frac{196}{225}}$

$-\frac{14}{15}$

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Name_____

Percent Word Problems

Date_____ Period____

Solve each problem.

1) What percent of 126 is 22?

2) 81 is 56% of what?

3) 25.7 is what percent of 141?

4) 17% of what is 156?

5) 46 is what percent of 107?

6) 79.9 is 99% of what?

7) 62% of what is 89.3?

8) What percent of 137.4 is 96?

9) 30% of 117 is what?

10) 11 is what percent of 97?

11) 120% of 118 is what?

12) 25 is what percent of 37?

13) What is 270% of 60?

14) 73% of what is 156.4?

15) 87% of 41 is what?

16) 9 is what percent of 84?

17) What percent of 88.6 is 70?

18) What percent of 137 is 86?

Name_____

Percent Word Problems

Date_____ Period____

Solve each problem.

1) What percent of 126 is 22?

17.5%

2) 81 is 56% of what?

144.6

3) 25.7 is what percent of 141?

18.2%

4) 17% of what is 156?

917.6

5) 46 is what percent of 107?

43%

6) 79.9 is 99% of what?

80.7

7) 62% of what is 89.3?

144

8) What percent of 137.4 is 96?

69.9%

9) 30% of 117 is what?

35.1

10) 11 is what percent of 97?

11.3%

11) 120% of 118 is what?

141.6

12) 25 is what percent of 37?

67.6%

13) What is 270% of 60?

162

14) 73% of what is 156.4?

214.2

15) 87% of 41 is what?

35.7

16) 9 is what percent of 84?

10.7%

17) What percent of 88.6 is 70?

79%

18) What percent of 137 is 86?

62.8%

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Name_____

Finding Percent Change

Date_____ Period____

Find each percent change. Round to the nearest tenth of a percent. State if it is an increase or decrease.

1) From 82 to 38

2) From 75 to 45

3) From 33 to 47

4) From 92 to 9.7

5) From 70 to 62

6) From 8 to 4

7) From 58.5 to 76.3

8) From 58 to 53

9) From 79 to 94

10) From 63 to 98

11) From 84 to 4

12) From 71 to 22

13) From 79 ft to 157 ft

14) From 174 miles to 135.9 miles

15) From $109 to $98

16) From 122 minutes to 109 minutes

17) From 43 minutes to 160 minutes

18) From 55 grams to 70 grams

19) From 199 ft to 92 ft

20) From 152 miles to 196 miles

21) From 141 grams to 142 grams

22) From 88 grams to 84 grams

23) From 43 minutes to 28 minutes

24) From 54 m to 154 m

Name_____

Finding Percent Change

Date_____ Period____

Find each percent change. Round to the nearest tenth of a percent. State if it is an increase or decrease.

1) From 82 to 38

53.7% decrease

2) From 75 to 45

40% decrease

3) From 33 to 47

42.4% increase

4) From 92 to 9.7

89.5% decrease

5) From 70 to 62

11.4% decrease

6) From 8 to 4

50% decrease

7) From 58.5 to 76.3

30.4% increase

8) From 58 to 53

8.6% decrease

9) From 79 to 94

19% increase

10) From 63 to 98

55.6% increase

11) From 84 to 4

95.2% decrease

12) From 71 to 22

69% decrease

13) From 79 ft to 157 ft

98.7% increase

14) From 174 miles to 135.9 miles

21.9% decrease

15) From $109 to $98

10.1% decrease

16) From 122 minutes to 109 minutes

10.7% decrease

17) From 43 minutes to 160 minutes

272.1% increase

18) From 55 grams to 70 grams

27.3% increase

19) From 199 ft to 92 ft

53.8% decrease

20) From 152 miles to 196 miles

28.9% increase

21) From 141 grams to 142 grams

0.7% increase

22) From 88 grams to 84 grams

4.5% decrease

23) From 43 minutes to 28 minutes

34.9% decrease

24) From 54 m to 154 m

185.2% increase

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Name_____

Markup, Discount, and Tax

Date_____ Period____

Find the selling price of each item.

1) Cost of a sled: $99.50
Markup: 95%

2) Cost of a comic book: $3.95
Markup: 20%

3) Cost of an oil change: $18.00
Markup: 70%

4) Cost of a CD: $14.50
Markup: 30%

5) Cost of an MP3 player: $129.50
Markup: 60%

6) Cost of an oil change: $21.95
Markup: 65%

7) Cost of a pen: $0.95
Markup: 60%

8) Cost of a computer: $1,850.00
Markup: 75%

9) Original price of concert tickets: $100.00
Discount: 21%

10) Original price of a book: $18.50
Discount: 45%

11) Original price of a telescope: $99.99
Discount: 13%

12) Original price of a CD: $22.99
Discount: 5%

13) Original price of a sled: $99.50
Discount: 50%

14) Original price of a camera: $554.99
Discount: 48%

15) Original price of a CD: $17.00
Discount: 50%

16) Original price of a CD: $22.95
Discount: 10%

17) Original price of a book: $49.95
Tax: 3%

18) Original price of a book: $90.50
Tax: 4%

19) Original price of an MP3 player: $99.50
Tax: 4%

20) Original price of a microphone: $129.99
Tax: 1%

21) Original price of a pen: $1.50
Tax: 4%

22) Original price of shorts: $19.99
Tax: 2%

23) Original price of an SUV: $42,000.00
Tax: 3%

24) Original price of a goldfish: $1.50
Tax: 5%

Name_____

Markup, Discount, and Tax

Date_____ Period____

Find the selling price of each item.

1) Cost of a sled: $99.50
Markup: 95%

$194.03

2) Cost of a comic book: $3.95
Markup: 20%

$4.74

3) Cost of an oil change: $18.00
Markup: 70%

$30.60

4) Cost of a CD: $14.50
Markup: 30%

$18.85

5) Cost of an MP3 player: $129.50
Markup: 60%

$207.20

6) Cost of an oil change: $21.95
Markup: 65%

$36.22

7) Cost of a pen: $0.95
Markup: 60%

$1.52

8) Cost of a computer: $1,850.00
Markup: 75%

$3,237.50

9) Original price of concert tickets: $100.00
Discount: 21%

$79.00

10) Original price of a book: $18.50
Discount: 45%

$10.18

11) Original price of a telescope: $99.99
Discount: 13%

$86.99

12) Original price of a CD: $22.99
Discount: 5%

$21.84

13) Original price of a sled: $99.50
Discount: 50%

$49.75

14) Original price of a camera: $554.99
Discount: 48%

$288.59

15) Original price of a CD: $17.00
Discount: 50%

$8.50

16) Original price of a CD: $22.95
Discount: 10%

$20.66

17) Original price of a book: $49.95
Tax: 3%

$51.45

18) Original price of a book: $90.50
Tax: 4%

$94.12

19) Original price of an MP3 player: $99.50
Tax: 4%

$103.48

20) Original price of a microphone: $129.99
Tax: 1%

$131.29

21) Original price of a pen: $1.50
Tax: 4%

$1.56

22) Original price of shorts: $19.99
Tax: 2%

$20.39

23) Original price of an SUV: $42,000.00
Tax: 3%

$43,260.00

24) Original price of a goldfish: $1.50
Tax: 5%

$1.58

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Name_____

Proportions

Date_____ Period____

State if each pair of ratios forms a proportion.

1) $\frac{4}{2}$ and $\frac{20}{6}$

2) $\frac{3}{2}$ and $\frac{18}{8}$

3) $\frac{4}{3}$ and $\frac{16}{12}$

4) $\frac{4}{3}$ and $\frac{8}{6}$

5) $\frac{12}{24}$ and $\frac{3}{4}$

6) $\frac{6}{9}$ and $\frac{2}{3}$

Solve each proportion.

7) $\frac{10}{k} = \frac{8}{4}$

8) $\frac{m}{10} = \frac{10}{3}$

9) $\frac{2}{x} = \frac{7}{9}$

10) $\frac{3}{x} = \frac{7}{10}$

11) $\frac{4}{9} = \frac{2}{x}$

12) $\frac{6}{a} = \frac{3}{8}$

13) $\frac{8n}{8} = \frac{8}{3}$

14) $\frac{7}{9} = \frac{a}{5}$

15) $\frac{p}{8} = \frac{13}{2}$

16) $\frac{3}{13} = \frac{v}{3}$

17) $\frac{10}{12} = \frac{2}{n}$

18) $\frac{11}{10} = \frac{r}{11}$

19) $\frac{x}{9} = \frac{7}{14}$

20) $\frac{a}{10} = \frac{11}{14}$

21) $\frac{v}{12} = \frac{10}{2}$

22) $\frac{6}{14} = \frac{5}{n}$

Name_____

Proportions

Date_____ Period____

State if each pair of ratios forms a proportion.

1) $\frac{4}{2}$ and $\frac{20}{6}$

No

2) $\frac{3}{2}$ and $\frac{18}{8}$

No

3) $\frac{4}{3}$ and $\frac{16}{12}$

Yes

4) $\frac{4}{3}$ and $\frac{8}{6}$

Yes

5) $\frac{12}{24}$ and $\frac{3}{4}$

No

6) $\frac{6}{9}$ and $\frac{2}{3}$

Yes

Solve each proportion.

7) $\frac{10}{k} = \frac{8}{4}$

$\{5\}$

8) $\frac{m}{10} = \frac{10}{3}$

$\{33.33\}$

9) $\frac{2}{x} = \frac{7}{9}$

$\{2.57\}$

10) $\frac{3}{x} = \frac{7}{10}$

$\{4.28\}$

11) $\frac{4}{9} = \frac{2}{x}$

$\{4.5\}$

12) $\frac{6}{a} = \frac{3}{8}$

$\{16\}$

13) $\frac{8n}{8} = \frac{8}{3}$

$\{2.66\}$

14) $\frac{7}{9} = \frac{a}{5}$

$\{3.88\}$

15) $\frac{p}{8} = \frac{13}{2}$

$\{52\}$

16) $\frac{3}{13} = \frac{v}{3}$

$\{0.69\}$

17) $\frac{10}{12} = \frac{2}{n}$

$\{2.4\}$

18) $\frac{11}{10} = \frac{r}{11}$

$\{12.1\}$

19) $\frac{x}{9} = \frac{7}{14}$

$\{4.5\}$

20) $\frac{a}{10} = \frac{11}{14}$

$\{7.85\}$

21) $\frac{v}{12} = \frac{10}{2}$

$\{60\}$

22) $\frac{6}{14} = \frac{5}{n}$

$\{11.66\}$

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Name_____

Proportion Word Problems

Date_____ Period____

Answer each question and round your answer to the nearest whole number.

1) If you can buy one can of pineapple chunks for $2 then how many can you buy with $10?

2) One jar of crushed ginger costs $2. How many jars can you buy for $4?

3) One cantaloupe costs $2. How many cantaloupes can you buy for $6?

4) One package of blueberries costs $3. How many packages of blueberries can you buy for $9?

5) Shawna reduced the size of a rectangle to a height of 2 in. What is the new width if it was originally 24 in wide and 12 in tall?

6) Ming was planning a trip to Western Samoa. Before going, she did some research and learned that the exchange rate is 6 Tala for $2. How many Tala would she get if she exchanged $6?

7) Jasmine bought 32 kiwi fruit for $16. How many kiwi can Lisa buy if she has $4?

8) If you can buy four bulbs of elephant garlic for $8 then how many can you buy with $32?

9) One bunch of seedlees black grapes costs $2. How many bunches can you buy for $20?

10) The money used in Jordan is called the Dinar. The exchange rate is $3 to 2 Dinars. Find how many dollars you would receive if you exchanged 22 Dinars.

11) Gabriella bought three cantaloupes for $7. How many cantaloupes can Shayna buy if she has $21?

12) Jenny was planning a trip to the United Arab Emirates. Before going, she did some research and learned that the exchange rate is 4 Dirhams for every $1. How many Dirhams would she get if she exchanged $5?

13) Castel bought four bunches of fennel for $9. How many bunches of fennel can Mofor buy if he has $18?

14) If you can buy one fruit basket for $30 then how many can you buy with $60?

Answer each question. Round your answer to the nearest tenth. Round dollar amounts to the nearest cent.

15) Asanji took a trip to Mexico. Upon leaving he decided to convert all of his Pesos back into dollars. How many dollars did he receive if he exchanged 42.7 Pesos at a rate of $5.30 = 11.1 Pesos?

16) The currency in Argentina is the Peso. The exchange rate is approximately $3 = 1 Peso. At this rate, how many Pesos would you get if you exchanged $121.10?

17) Mary reduced the size of a painting to a width of 3.3 in. What is the new height if it was originally 32.5 in tall and 42.9 in wide?

18) Molly bought two heads of cabbage for $1.80. How many heads of cabbage can Willie buy if he has $28.80?

Name_____

Proportion Word Problems

Date_____ Period____

Answer each question and round your answer to the nearest whole number.

1) If you can buy one can of pineapple chunks for $2 then how many can you buy with $10?

   5

2) One jar of crushed ginger costs $2. How many jars can you buy for $4?

   2

3) One cantaloupe costs $2. How many cantaloupes can you buy for $6?

   3

4) One package of blueberries costs $3. How many packages of blueberries can you buy for $9?

   3

5) Shawna reduced the size of a rectangle to a height of 2 in. What is the new width if it was originally 24 in wide and 12 in tall?

   4 in

6) Ming was planning a trip to Western Samoa. Before going, she did some research and learned that the exchange rate is 6 Tala for $2. How many Tala would she get if she exchanged $6?

   18 Tala

7) Jasmine bought 32 kiwi fruit for $16. How many kiwi can Lisa buy if she has $4?

   8

8) If you can buy four bulbs of elephant garlic for $8 then how many can you buy with $32?

   16

9) One bunch of seedlees black grapes costs $2. How many bunches can you buy for $20?

   10

10) The money used in Jordan is called the Dinar. The exchange rate is $3 to 2 Dinars. Find how many dollars you would receive if you exchanged 22 Dinars.

    $33

11) Gabriella bought three cantaloupes for $7. How many cantaloupes can Shayna buy if she has $21?

9

12) Jenny was planning a trip to the United Arab Emirates. Before going, she did some research and learned that the exchange rate is 4 Dirhams for every $1. How many Dirhams would she get if she exchanged $5?

20 Dirhams

13) Castel bought four bunches of fennel for $9. How many bunches of fennel can Mofor buy if he has $18?

8

14) If you can buy one fruit basket for $30 then how many can you buy with $60?

2

Answer each question. Round your answer to the nearest tenth. Round dollar amounts to the nearest cent.

15) Asanji took a trip to Mexico. Upon leaving he decided to convert all of his Pesos back into dollars. How many dollars did he receive if he exchanged 42.7 Pesos at a rate of $5.30 = 11.1 Pesos?

$20.39

16) The currency in Argentina is the Peso. The exchange rate is approximately $3 = 1 Peso. At this rate, how many Pesos would you get if you exchanged $121.10?

40.4 Pesos

17) Mary reduced the size of a painting to a width of 3.3 in. What is the new height if it was originally 32.5 in tall and 42.9 in wide?

2.5 in

18) Molly bought two heads of cabbage for $1.80. How many heads of cabbage can Willie buy if he has $28.80?

32

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Name_____

Factoring Monomials

Date_____ Period____

Write the prime factorization of each. Do not use exponents.

1) $25n^2$

2) $18xy$

3) $12a$

4) $21y^2$

5) $81a$

6) $92q$

7) $36x^3$

8) $24h$

9) $48x^2$

10) $92xy$

11) $18x^2$

12) $50x$

Write the prime-power factorization of each.

13) $16y$

14) $28y$

15) $8v$

16) $18xy$

17) $10y^2$

18) $20b^2$

19) $21x^2$

20) $77y$

21) $84ab$

22) $78a^3$

23) $52uv$

24) $66y$

25) $82ab$

26) $26x^2$

Name_____

Factoring Monomials

Date_____ Period____

Write the prime factorization of each. Do not use exponents.

1) $25n^2$

$5 \cdot 5 \cdot n \cdot n$

2) $18xy$

$2 \cdot 3 \cdot 3 \cdot x \cdot y$

3) $12a$

$2 \cdot 2 \cdot 3 \cdot a$

4) $21y^2$

$3 \cdot 7 \cdot y \cdot y$

5) $81a$

$3 \cdot 3 \cdot 3 \cdot 3 \cdot a$

6) $92q$

$2 \cdot 2 \cdot 23 \cdot q$

7) $36x^3$

$2 \cdot 2 \cdot 3 \cdot 3 \cdot x \cdot x \cdot x$

8) $24h$

$2 \cdot 2 \cdot 2 \cdot 3 \cdot h$

9) $48x^2$

$2 \cdot 2 \cdot 2 \cdot 2 \cdot 3 \cdot x \cdot x$

10) $92xy$

$2 \cdot 2 \cdot 23 \cdot x \cdot y$

11) $18x^2$

$2 \cdot 3 \cdot 3 \cdot x \cdot x$

12) $50x$

$2 \cdot 5 \cdot 5 \cdot x$

Write the prime-power factorization of each.

13) $16y$

$2^4 \cdot y$

14) $28y$

$2^2 \cdot 7 \cdot y$

15) $8v$

$2^3 \cdot v$

16) $18xy$

$2 \cdot 3^2 \cdot x \cdot y$

17) $10y^2$

$2 \cdot 5 \cdot y^2$

18) $20b^2$

$2^2 \cdot 5 \cdot b^2$

19) $21x^2$

$3 \cdot 7 \cdot x^2$

20) $77y$

$7 \cdot 11 \cdot y$

21) $84ab$

$2^2 \cdot 3 \cdot 7 \cdot a \cdot b$

22) $78a^3$

$2 \cdot 3 \cdot 13 \cdot a^3$

23) $52uv$

$2^2 \cdot 13 \cdot u \cdot v$

24) $66y$

$2 \cdot 3 \cdot 11 \cdot y$

25) $82ab$

$2 \cdot 41 \cdot a \cdot b$

26) $26x^2$

$2 \cdot 13 \cdot x^2$

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Name_____

Adding and Subtracting Polynomials

Date_____ Period____

Simplify each expression.

1) $(5 + 5n^3) - (1 - 3n^3)$

2) $(6a - 3a^2) + (2a^2 - 3a)$

3) $(x^2 - x) + (8x - 2x^2)$

4) $(2a^2 + 4a^3) - (3a^3 + 8)$

5) $(5x^2 + 4) - (5 + 5x^3)$

6) $(8n^2 - 2n^3) + (6n^3 - 8n^2)$

7) $(8b^3 + 8) - (6 - 7b^3)$

8) $(4x^3 - 6) + (5x^3 + 3)$

9) $(10p^4 + 11) - (11p^4 + 13 + 16p^2)$

10) $(20v^2 - 9v^3) - (7v^3 - 10v^4 - 14v^2)$

11) $(10x^4 - 16) + (12 - 6x^3 + 11x^4)$

12) $(14 + 12a^3) + (17a^4 + 15 - 5a^3)$

13) $(17v^2 - 8) + (17v^2 + 10 + v^3)$

14) $(20n + 11n^4) - (15n + 16n^2 - 17n^4)$

15) $(10k^4 + 17k^3) - (14k^3 - 2k + 9k^4)$

16) $(9r + 6r^4) + (12r - 2r^4 - 17)$

17) $(6r + 2 + 8r^3) - (5r^3 - 11 - 8r^5) - (6r + 9r^5)$

18) $(9a^4 + 1 - 11a^2) - (a + 8a^2 + 2) - (6a^2 - 9)$

19) $(9k - 9 - 12k^4) - (4k + k^4 + 4) - (10 + 7k)$

20) $(8x^4 - 12 + 3x) - (9x^4 + 7 - 11x) + (9x + 8)$

21) $(7r^2 + r^3 - 3) + (6r^3 - 3r^2 + 10) + (2 + r^2)$

22) $(10x + 8x^5 - 2) + (12 + x - 6x^4) - (x^4 - x^2)$

23) $(p^4 + 8p + 6) + (7p - 3p^4 + 6) - (10 + 10p)$

24) $(9n^5 + 2n - 11) - (11n - 7n^5 + 3) - (5 + 7n)$

Name_____

Adding and Subtracting Polynomials

Date_____ Period____

Simplify each expression.

1) $(5 + 5n^3) - (1 - 3n^3)$

$8n^3 + 4$

2) $(6a - 3a^2) + (2a^2 - 3a)$

$-a^2 + 3a$

3) $(x^2 - x) + (8x - 2x^2)$

$-x^2 + 7x$

4) $(2a^2 + 4a^3) - (3a^3 + 8)$

$a^3 + 2a^2 - 8$

5) $(5x^2 + 4) - (5 + 5x^3)$

$-5x^3 + 5x^2 - 1$

6) $(8n^2 - 2n^3) + (6n^3 - 8n^2)$

$4n^3$

7) $(8b^3 + 8) - (6 - 7b^3)$

$15b^3 + 2$

8) $(4x^3 - 6) + (5x^3 + 3)$

$9x^3 - 3$

9) $(10p^4 + 11) - (11p^4 + 13 + 16p^2)$

$-p^4 - 16p^2 - 2$

10) $(20v^2 - 9v^3) - (7v^3 - 10v^4 - 14v^2)$

$10v^4 - 16v^3 + 34v^2$

11) $(10x^4 - 16) + (12 - 6x^3 + 11x^4)$

$21x^4 - 6x^3 - 4$

12) $(14 + 12a^3) + (17a^4 + 15 - 5a^3)$

$17a^4 + 7a^3 + 29$

13) $(17v^2 - 8) + (17v^2 + 10 + v^3)$

$v^3 + 34v^2 + 2$

14) $(20n + 11n^4) - (15n + 16n^2 - 17n^4)$

$28n^4 - 16n^2 + 5n$

15) $(10k^4 + 17k^3) - (14k^3 - 2k + 9k^4)$

$k^4 + 3k^3 + 2k$

16) $(9r + 6r^4) + (12r - 2r^4 - 17)$

$4r^4 + 21r - 17$

17) $(6r + 2 + 8r^3) - (5r^3 - 11 - 8r^5) - (6r + 9r^5)$

$-r^5 + 3r^3 + 13$

18) $(9a^4 + 1 - 11a^2) - (a + 8a^2 + 2) - (6a^2 - 9)$

$9a^4 - 25a^2 - a + 8$

19) $(9k - 9 - 12k^4) - (4k + k^4 + 4) - (10 + 7k)$

$-13k^4 - 2k - 23$

20) $(8x^4 - 12 + 3x) - (9x^4 + 7 - 11x) + (9x + 8)$

$-x^4 + 23x - 11$

21) $(7r^2 + r^3 - 3) + (6r^3 - 3r^2 + 10) + (2 + r^2)$

$7r^3 + 5r^2 + 9$

22) $(10x + 8x^5 - 2) + (12 + x - 6x^4) - (x^4 - x^2)$

$8x^5 - 7x^4 + x^2 + 11x + 10$

23) $(p^4 + 8p + 6) + (7p - 3p^4 + 6) - (10 + 10p)$

$-2p^4 + 5p + 2$

24) $(9n^5 + 2n - 11) - (11n - 7n^5 + 3) - (5 + 7n)$

$16n^5 - 16n - 19$

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Name_____

Multiplying a Polynomial and a Monomial

Date_____ Period____

Find each product.

1) $8x(6x+6)$

2) $7n(6n+3)$

3) $3r(7r-8)$

4) $8(8k-8)$

5) $10a(a-10b)$

6) $2(9x-2y)$

7) $7x(6x+4y)$

8) $4a(8a-8b)$

9) $3n(n^2-6n+5)$

10) $2k^3(2k^2+5k-4)$

11) $8r^2(4r^2-5r+7)$

12) $3(3v^2+8v-5)$

13) $7(6x^2+9xy+10y^2)$

14) $2u(6u^2-9uv+v^2)$

15) $9(x^2+xy-8y^2)$

16) $9v^2(u^2+uv-5v^2)$

Name_____

Multiplying a Polynomial and a Monomial

Date_____ Period____

Find each product.

1) $8x(6x+6)$

$48x^2+48x$

2) $7n(6n+3)$

$42n^2+21n$

3) $3r(7r-8)$

$21r^2-24r$

4) $8(8k-8)$

$64k-64$

5) $10a(a-10b)$

$10a^2-100ab$

6) $2(9x-2y)$

$18x-4y$

7) $7x(6x+4y)$

$42x^2+28xy$

8) $4a(8a-8b)$

$32a^2-32ab$

9) $3n(n^2-6n+5)$

$3n^3-18n^2+15n$

10) $2k^3(2k^2+5k-4)$

$4k^5+10k^4-8k^3$

11) $8r^2(4r^2-5r+7)$

$32r^4-40r^3+56r^2$

12) $3(3v^2+8v-5)$

$9v^2+24v-15$

13) $7(6x^2+9xy+10y^2)$

$42x^2+63xy+70y^2$

14) $2u(6u^2-9uv+v^2)$

$12u^3-18u^2v+2uv^2$

15) $9(x^2+xy-8y^2)$

$9x^2+9xy-72y^2$

16) $9v^2(u^2+uv-5v^2)$

$9v^2u^2+9v^3u-45v^4$

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

Name_____

Multiplying Binomials

Date_____ Period____

Find each product.

1) $(3n+2)(n+3)$

2) $(n-1)(2n-2)$

3) $(2x+3)(2x-3)$

4) $(r+1)(r-3)$

5) $(2n+3)(2n+1)$

6) $(3p-3)(p-1)$

7) $(3p+3)(3p+2)$

8) $(k-2)(k-3)$

9) $(v-1)(3v-3)$

10) $(2x-3)(3x+3)$

11) $(4n+4)(5n-8)$

12) $(5x-2)(5x-8)$

13) $(6x+2)(2x+8)$

14) $(3x+3)(x+4)$

15) $(5v+4)(3v-6)$

16) $(x-4)(x-7)$

17) $(5x+6)(8x-4)$

18) $(8b-1)(5b-5)$

Name_____

Multiplying Binomials

Date_____ Period____

Find each product.

1) $(3n+2)(n+3)$

$3n^2+11n+6$

2) $(n-1)(2n-2)$

$2n^2-4n+2$

3) $(2x+3)(2x-3)$

$4x^2-9$

4) $(r+1)(r-3)$

r^2-2r-3

5) $(2n+3)(2n+1)$

$4n^2+8n+3$

6) $(3p-3)(p-1)$

$3p^2-6p+3$

7) $(3p+3)(3p+2)$

$9p^2+15p+6$

8) $(k-2)(k-3)$

k^2-5k+6

9) $(v-1)(3v-3)$

$3v^2-6v+3$

10) $(2x-3)(3x+3)$

$6x^2-3x-9$

11) $(4n+4)(5n-8)$

$20n^2-12n-32$

12) $(5x-2)(5x-8)$

$25x^2-50x+16$

13) $(6x+2)(2x+8)$

$12x^2+52x+16$

14) $(3x+3)(x+4)$

$3x^2+15x+12$

15) $(5v+4)(3v-6)$

$15v^2-18v-24$

16) $(x-4)(x-7)$

$x^2-11x+28$

17) $(5x+6)(8x-4)$

$40x^2+28x-24$

18) $(8b-1)(5b-5)$

$40b^2-45b+5$

Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com

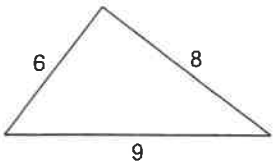
Name_____

The Pythagorean Theorem

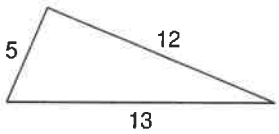
Date_____ Period____

Do the following lengths form a right triangle?

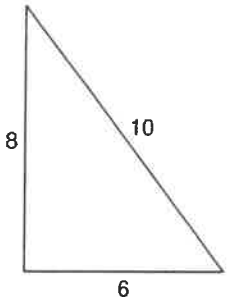
1)



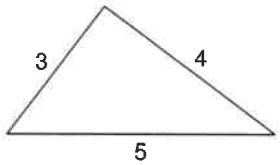
2)



3)



4)

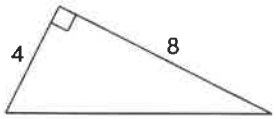


5) $a = 6.4,\ b = 12,\ c = 12.2$

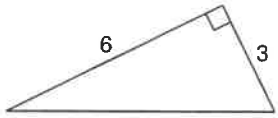
6) $a = 2.1,\ b = 7.2,\ c = 7.5$

Find each missing length to the nearest tenth.

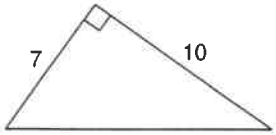
7)



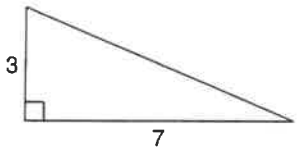
8)



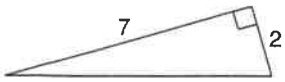
9)



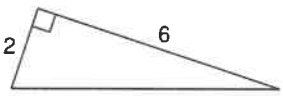
10)



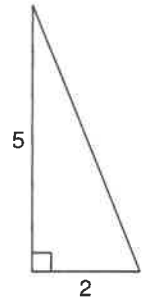
11)



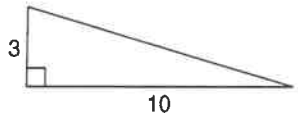
12)



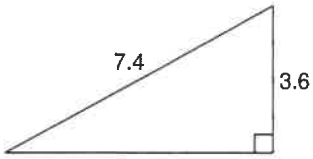
13)



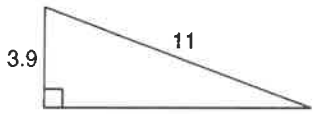
14)



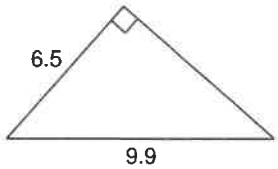
15)



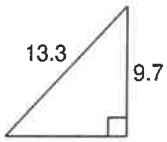
16)



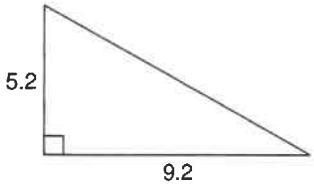
17)



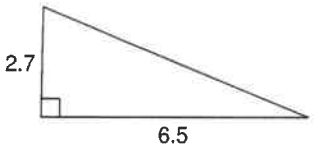
18)



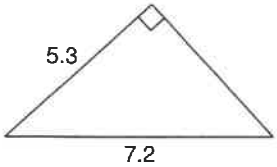
19)



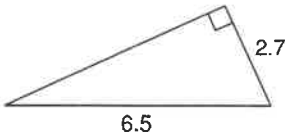
20)



21)



22)



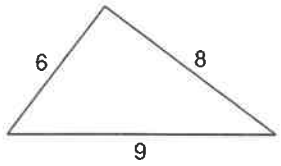
Name_____

The Pythagorean Theorem

Date_____ Period____

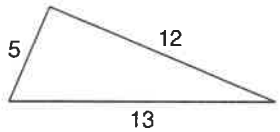
Do the following lengths form a right triangle?

1)



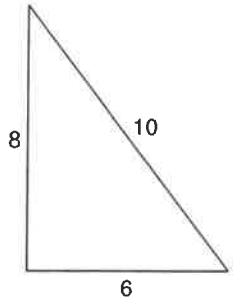
No

2)



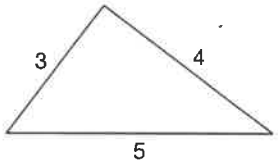
Yes

3)



Yes

4)



Yes

5) $a = 6.4,\ b = 12,\ c = 12.2$

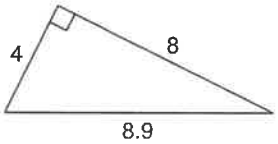
No

6) $a = 2.1,\ b = 7.2,\ c = 7.5$

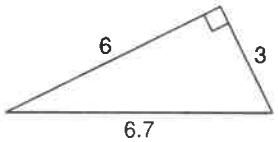
Yes

Find each missing length to the nearest tenth.

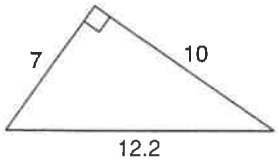
7)



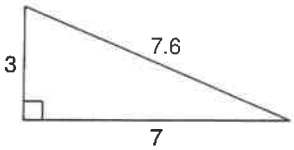
8)



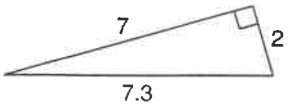
9)



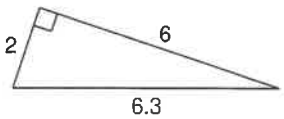
10)



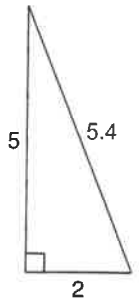
11)



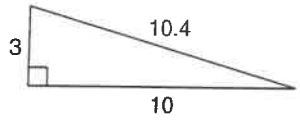
12)



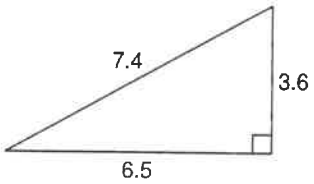
13)



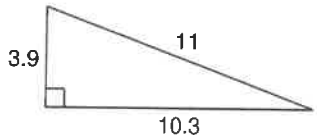
14)



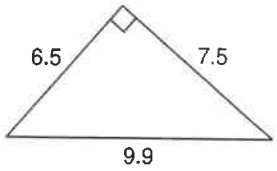
15)



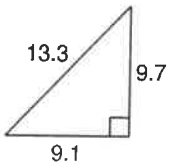
16)



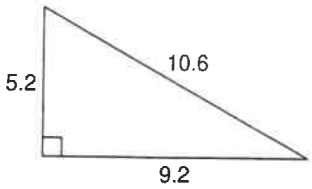
17)



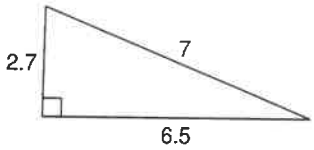
18)



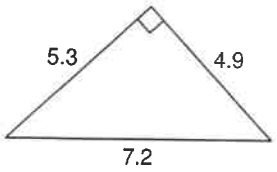
19)



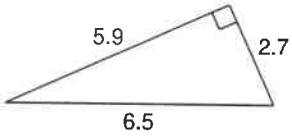
20)



21)



22)



Create your own worksheets like this one with **Infinite Pre-Algebra**. Free trial available at KutaSoftware.com