

LAWRENCE WOODMERE ACADEMY
MIDDLE SCHOOL
SUMMER MATH PACKET

NAME: _____

SEVENTH GRADE to EIGHTH GRADE

$$11 - (-12) =$$

$$3.5 - 7.1 + 1.3 =$$

$$\frac{7}{8} + \frac{4}{3} =$$

$$(-6) \times (-243) =$$

$$\left(-\frac{8}{3}\right) + \left(-\frac{4}{7}\right) =$$

$$-\frac{2}{3} \times \frac{4}{5} \times \frac{3}{8} =$$

$$\frac{5}{9} \div 8 =$$

$$24.32 \times -4.5 =$$

$$19\frac{2}{3} - 11\frac{5}{8} =$$

Simplify using order of operations

$$5 \times (11 - 3) + 5^2$$

$$(11 \times 5 + 9^2) - 5$$

$$(-4)^2 - (3 - 1 + 2 \times 3)$$

$$\frac{2(3 - 7)}{-6 + 8}$$

Evaluate by using substitution $m=6$ and $y=\frac{1}{2}$

$$3x+4y$$

$$.1^{,2}$$

Match each English phrase or sentence with its algebraic translation.

_____ 1. Five less than twice a number.

_____ 2. Five more than twice a number.

_____ 3. Five is less than twice a number.

_____ 4. Five more than twice a number is less than ten.

_____ 5. Five less than twice a number is greater than ten times the number.

_____ 6. Five less than twice times a number is less than the number.

{a} $2n + 5$

{b} $5 > 2n$

{c} $5 < 2n$

{d} $5 - 2n$

{e} $2n - 5$

{f} $2n + 5 > 10$

{g} $2n + 5 - 10$

{h} $2n - 5 > 10n$

{i} $2n - 5 < n$

{j} $2n + 5 < 10$

{k} $2n - 5 > 10$

{l} $2n - 5 < 10$

Ivan bought P pounds of peaches at \$2.29 per pound and G pounds of grapes at \$3.79 per pound.

a. Write an expression that gives the amount Ivan paid for the peaches and the grapes.

b. Suppose he bought 2 pounds of peaches and 3 pounds of grapes. How much did he spend in total?

c. Suppose he spent \$15.24 in total. If he only bought one pound of grapes, how many pounds of peaches did he buy?

Choose the correct answer for each question.

- (a) $x + y$ (b) $x - y$ (c) xy (d) $\frac{x}{y}$ (e) $\frac{y}{x}$

____ 4. You give a friend y dollars. You had x dollars. How much do you have left?

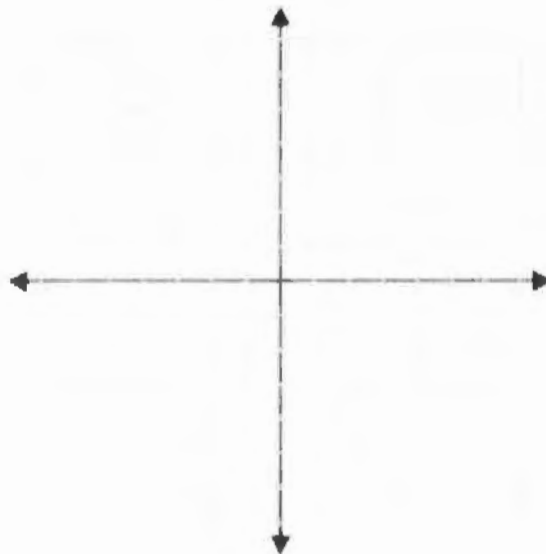
____ 5. You drove x miles in y hours. What was your rate?

____ 6. You buy x pencils at y cents each. What is the total cost?

____ 7. Sara is y years old. Her sister is x years older. How old is her sister?

Plot the following five points on the coordinate grid and label the points.

- A (3,5)
- B (4,-3)
- C (-2,4)
- D (-7,-2)
- E (0,5)



Simplify by using the distributive property and combining like terms

$$3x^2 + 4x + 6 - 2x + 3 - 8x^2 + 7$$

$$2(x - 6) + 4(x + 7) - 3(x + 1)$$

Add or subtract the polynomials

$$(4x^2 + 5x - 3) + (-3x^2 + x - 4) =$$

$$(7x^2 + 5x - 3) - (-2x^2 + x - 4) =$$

Factor the Polynomials (GCF)

$$8x^2 + 4x + 2$$

$$4x - 20$$

Solve the equations

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

2) $4s = -60$

3) $3.8 + m = -6.4$

4) $\frac{2}{3}x = 60$

5) $-7 + 2m = 17$

6) $\frac{x}{7} - 13 = -6$

7) $33 = -3m + 6$

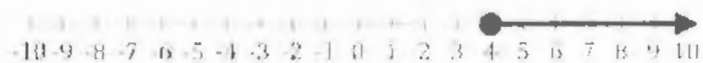
8) $5(-x + 6) = 20$

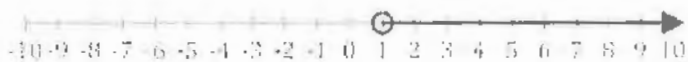
9) $-19 = 7x - 2(5x - 8)$

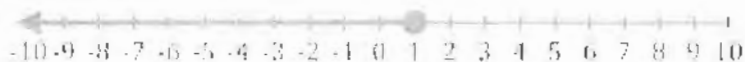
10) $6.2x - 9 = -114$

11)

Write each inequality







Solve each inequality and graph the solution

1) $2(6x - 5) < 14$



2) $\frac{3x - 8}{7} > 1$



Write an equation or inequality and then solve. Show work.

Five more than half a number is 13.

Five less than one-fourth of a number is -9.

Your parents decide to buy you a Playstation 4 for Christmas. It costs \$400. They make a down payment of \$150, and then pay off the remaining balance in 8 equal payments. How much is each payment?

You want to buy a pair of sneakers at a shoe store, and you can spend at most \$100. You have a coupon for \$20 off any pair of shoes at the store. What are the possible original prices of sneakers you can afford?

Convert 0.04 to both a fraction in simplest form and a percent.

3. 128 miles
4 hours

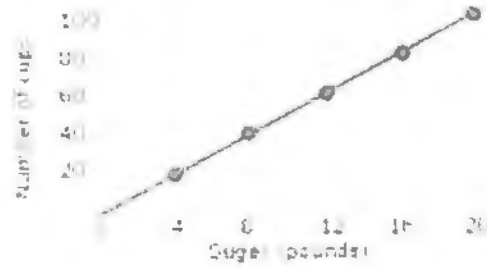
4. 225000 ft
18 boxes

Solve using proportions

1. You jog 3.6 miles in 30 minutes. At that rate, how long will it take you to jog 4.8 miles?

2. You earn \$33 in 8 hours. At that rate, how much would you earn in 5 hours?

Use the graph below to answer the questions



- a) Is the pounds of sugar proportional to the number of cups? How do you know?
- b) How many cups is one pound of sugar?
- c) Write an equation to represent y , the number of cups of sugar to x , the pounds of sugar.
- d) How many cups of sugar is 28 pounds?
- e) How many pounds of sugar is 60 cups?

A lamppost casts a shadow that is 35 yards long. A 3-foot-tall mailbox casts a shadow that is 5 yards long. How tall is the lamppost?

Solve for n

— —————

34 is 22% of what number?

Stuart made a fruit juice using oranges and grapes. Sixty percent of fruits are oranges. If he used a total of 60 oranges, how many grapes should he use?

Benny went to his local zoo that featured 34 reptile exhibits. If the zoo features 40 exhibits in total, then what percent of the zoo's exhibits feature reptiles?

A sweatshirt with a regular price of \$34 is first discounted by 20% and then by an additional 10%. a. What is the final sale price? b. How do these two discounts compare to a single discount of 30%? Explain.

The price of gasoline rose from \$3.50 to \$3.71 in one week. By what percent did the gas price rise?

Simplify using the rules of exponents

$$4^1 =$$

$$4^0 =$$

$$4^{-2} =$$

$$5x^2y^2 \times 2x^4y =$$

$$\frac{w^4}{w^6} =$$

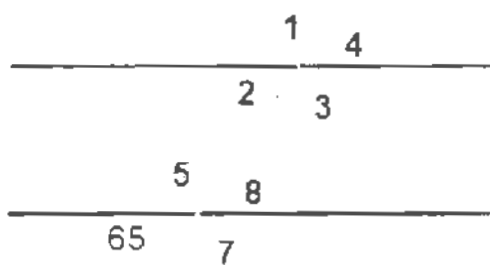
$$\frac{-10m^4p^2}{5m^2p} =$$

$$(x^4)^6 =$$

$$(2x^4y)^3 =$$

$$\frac{2m^2p \times 3mp^4}{3mp^3} =$$

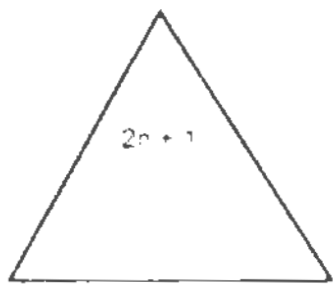
$$(4.6 \times 10^4) + (5 \times 10^5)$$



Find the measure of the remaining angles.

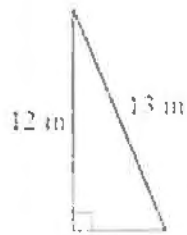
- ∠1
- ∠2
- ∠3
- ∠4
- ∠5
- ∠7
- ∠8

Find the value of n



Find the missing side of each triangle. Round your answers to the nearest tenth if necessary.

1)



2)

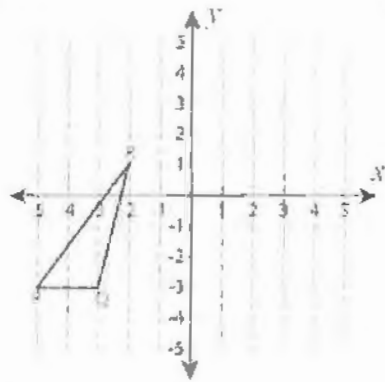


A soccer field is a rectangle 100 meters wide and 130 meters long. The coach asks players to run from one corner to the other corner diagonally across. What is that distance?

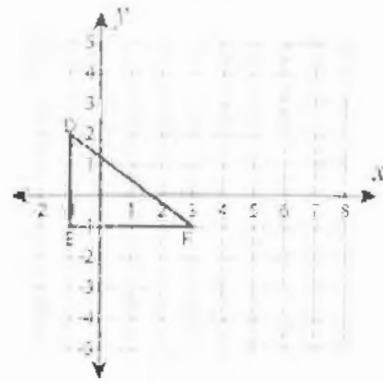
How far from the base of the house do you need to place a 15-foot ladder so that it exactly reaches the top of a 12-foot tall wall?

Graph the image of each triangle after the given transformation.

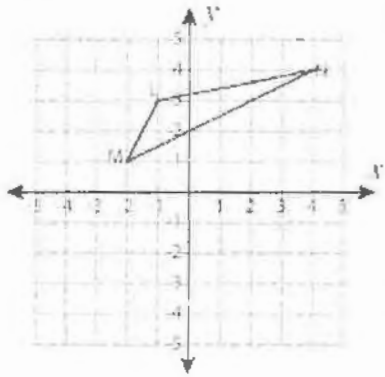
1) Translate 2 units up and 7 units right



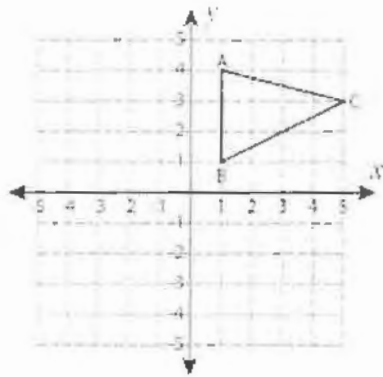
2) Reflection across the line $x = 3$



3) 90° clockwise rotation about the origin

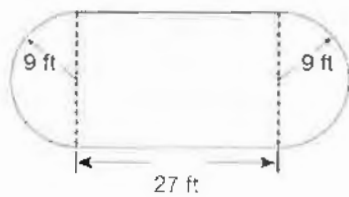


4) Translate 4 units left and 6 units down

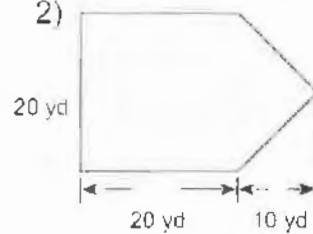


Find the area of each figure, round your answer to one decimal place if necessary.

1)



2)



3)

