1. Sonya, who is the oldest member of the cheerleading squad team at EPMS, is 5 years older than one-half the age of the coach. If the coach is *n* years old, write an expression to describe Sonya’s age.
2. Mrs. Consola is 9 years younger than three times the age of her students. If Mrs. Consola is *c* years old, write an expression to describe her age.
3. Courtney is the youngest student in Ms. Waddle’s math class. Courntey is 6 years less than one half Ms. Waddle’s age. If Ms. Waddle’s age is *x*, write an expression to describe her age.
4. Mrs. Huftalin is 7 years older than one half the age of Mr. Willis. If Mrs. Huftalin is *h* years old, write an expression to describe her age.
5. Four less than three times a number *(x)*is 8, write and solve the equation to represent this.
6. Nine more than twice a number *(y)* is 31, write and solve the equation to represent this.
7. Two less than a number *(n)* is -7, write and solve the equation to represent this.
8. At the school carnival, Maria bought a hot dog for $3. She also bought *t* game tickets for $0.75 each. Maria spent a total of $15.

Write an equation that can be used to find the number of game tickets that Maria bought?

1. To print t-shirts for the basketball team, a printer charges a one-time charge of $25 plus $8.50 per shirt. Write an algebraic expression for the cost of *t* t-shirts.
2. To rent jet skis from Panama City Explorers, they charge a key access fee of $25 plus $15 per half hour. If Brian has $55, how long can he rent the jetski for?
3. Brewster’s Lawn Service charges a yearly fuel fee of $100 plus $25 to mow your lawn. If your total bill at the end of the year is $1200, how many times did Brewster mow your lawn?
4. Ansley’s bank charges a $3 fee per month plus a $0.10 fee per check. The formula below gives *f*, the total fee in dollars for a month in which Ansley writes *n* checks.

*f* = 3 + 0.10*n*

How many checks did Ansley write during a month in which her total fee was $4.20?

1. A taxi ride costs $2 plus $5 for each mile driven. The expression 2 + 5m represents the cost of a ride that is *m* miles long. What will it cost Aniyah if her ride is 20 miles?
2. Kate’s cleaning service charges a $25 monthly fee plus a $30 fee per clean. The formula below gives c, the total fee in dollars for a month in which Kate uses the cleaning service *s*.

*c* = 25 + 0.30*n*

How many times did Kate use the cleaning

service in which her total fee was $175?

1. Simplify the following expressions:

a) 3x + 2y -6y + 4x

b) 7c + 8b -9c +6b

c) 7(m-2n) + 3n

d) -2(x-3) + 6x

1. 2n – 3x + 7(x – 4)

1. -5m –( -m + 9) – 5

**For 16-20 evaluate when x = 4 and y =7**

1. 4x – 3(x–5)
2. 3y + 5(y–2)
3. 9y -7(y+1)
4. 2x -4(x-2)
5. 6y + 3(y+x)
6. Your math teacher said that the highest and lowest grades, *g*, on your last test can be represented by the equation

| *g* – 75 | = 10.

What were the highest and lowest grades on the last math test?

1. The police officer said that the highest and lowest speed on GA 400, *s*, can be represented by the equation

| *s* – 45 | = 25.

What were the highest and lowest speeds on GA 400?

**For #’s 23-35 solve for the given variable.**

1. -2(m + 6) = 16
2. -4(x + 5) = 32

1. -7x + 11 = 3(x – 3)
2. –n – 4 = 5(n -2)
3. -3m – 6 = 2(m + 2)
4. -7y + 20 = 6(y – 1)
5. 20 + 6y = 60
6. 10 + 3y = -23
7. 6│y + 8│= 54
8. 2│n + 7│= 22
9. 3│x -4│= 21
10. 11│y + 12│= 77
11. 9│c + 1│= 81
12. The formula for volume is volume equals height times length times width

*V =hlw*

Solve this formula for *l*.

1. The formula for speed is speed equals distance divided by time

*S =*

Solve this formula for *d*.

1. The formula for pressure is pressure equals force divided by area

*P =*

Solve this formula for *f*.

1. In the formula for finding simple interest *I* = *Prt, I* represents the interest, *P* represents the amount of money invested, *r* represents the annual rate of interest, and *t* represents the time in years. What is the equation when solved for the time *t*?
2. What is the value of 48 – 32?
3. What is the value of 101 – 43?

1. What is the value of 33– 43?
2. What is the value of 40 – 25?
3. Simplify (-4)5.
4. Simplify (-2)4.
5. Simplify -(6)3.
6. Simplify -(3)4.
7. Write an expression that is equivalent to

*b* ∙ *b* ∙*b* ∙*b*?

1. Write an expression that is equivalent to

*c* ∙ *c* ∙*c* ∙*c* ∙*c* ∙ *c*∙*c* ∙*c* ∙*c* ∙*c* ∙*c*?

1. Write an expression that is equivalent to

*x* ∙ *x* ∙*x*?

1. Write an expression that is equivalent to

*y* ∙ *y*?

For #’s 52-65 simplify.

(re-write using a single exponent/no negative exponents).

1. *x*3*x*5
2. *y*6*y*3
3. *k*5*k*8
4. *x*-9*x*5
5. 42 ⋅ 4–5
6. 5-6 ⋅ 5–2
7. 24 ⋅ 2–5
8. (43)2
9. (127)8
10. (109)5
11. 
12. 
13. 
14. 
15. Amicolola Falls National Park and Preserve in Georgia covers 11,400,000 acres. What is 11,400,000 written in scientific notation?
16. The Blue Ridge Mountains covers 322,000,000 acres. What is 322,000,000 written in scientific notation?
17. Bill Gates and Oprah Winfrey’s combined earned income in 2009 was 437,000,000,000. What is 437,000,000,000 written in scientific notation?

1. The earth’s core temperature is estimated to be about 1.7 × 106°F. Re-write this temperature in standard form.
2. The temperature of an industrial welding machine is estimated to be about 3.2 × 103°F. Re-write this temperature in standard form.
3. Invisible bugs in the air are measured to be equal to 1 × 10-5 meter. Re-write this number in standard notation?
4. The average amount of network space that one person uses on is equal to 2 x 10-7GB. Re-write this number in standard notation?
5. The diagram shows how some of the subsets of the set of real numbers are related.

a) Which set(s) would 5 fit in?

b) Which set(s) would -11 fit in?

c) Which set(s) would  fit in?

d) Which set(s) would  fit in?

e) Which set(s) would 2.33456789123….. fit in?

1. Olivia’s square back yard has an area of 36m2. What is the length of each side of Olivia’s back yard?
2. Each square floor tile in Miguel’s bathroom has an area of 9in2. What is the length of each side of the floor tile?
3. Catherine draws a square that has an area of 100cm2. What is the length of each side of the square?
4. Plot and label the following on the number line:

 A. 

 B. 

 C. 

 D. 

1. Decide if the numbers below are rational or irrational.

a) 

b) 2

c) 3.21212

d) –17

e) 2.575

f) 2.910104928….

g) 

1. Find the square root of 64.
2. Find the square root of 169.
3. Find the square root(s) of 9
4. Find the square root(s) of 49.
5. Determine what two numbers each of the following fall between:

a)  a number between \_\_\_\_ and \_\_\_\_\_\_.

b)  a number between \_\_\_\_ and \_\_\_\_\_\_.

c)  a number between \_\_\_\_ and \_\_\_\_\_.

d)  a number between \_\_\_\_ and \_\_\_\_\_\_.

1. Find the perimeter of the rectangle below.

 ft

  ft

1. Find the perimeter of the rectangle below.

 ft

  ft

1. Simplify:  + 
2. Simplify: - 
3. Simplify: + 
4. Simplify: 
5. Simplify: 
6. Simplify: 
7. Three squares have been placed so that two vertices of each square touch a vertex of each of the other squares as shown below.

A right triangular figure is formed in the space between the three squares. The area of the smallest square is 9 cm2 and the area of the medium square is 16 cm2. Find the hypotenuse of the right triangle.

1. Find the area of square *ABCD.* M8G2b



1. A windlass is used to pull a boat to the dock. The rope is attached to the boat at a point 10 feet below the level of the windlass.

 **10**

 **26ft**

What is the distance from the boat to the dock when the rope is 26 feet?

1. Mr. Davison designed a vegetable garden in the shape of a square. He plans to build a walkway through the garden, as shown. What is the approximate length of the walkway?

10ft

1. Given *y* || *z*. *m*∠1 = 115o, find the measures of all the angles.

 *l*

 1 2

 3 4 *y*

 5 6

7 8 *z*

1. Using the diagram above what is the **sum** of the measures of ∠*5* and ∠*8*?
2. Liberty Street, Justice Avenue, and American Way are parallel streets in Johnsonville. Train tracks and Washington Road intersect the parallel streets as shown on the map below.

 150 yd 270 yd

 50 yd *x* yd

 **Liberty**

 **Street**

 **Justice**

 **Avenue**

 **American**

 **Way**

 **Train Washington**

**Tracks Road**

25

40

10

Using the information given on the map, find the missing measure.

1. In the figure below, *BE* is parallel to *CD*.  What is the measure of *x* in units?

A

10

4

D

E

9

x

B

C

1. In the figure below, quadrilateral *PQRS* is congruent to quadrilateral *VUTW*.

 \_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_

Graph. Use graph paper.

1. y = 2x + 1
2. y = x – 2
3. y = -x + 4

Determine if each of the following relations is or is not a function.

1. (-3, 0), (-2, -1) (3, 2), (2, -5)
2. (7, 2), (8, 2), (9, 2), (10, 2)
3. (-1, 3) (0, 1) (2, 2), (4, 4)
4. (7, 2), (3, 4), (7, 5), (4, 6)

Determine if the following are functions using the vertical line test.

121.

122.

123.

Calculate the slope.

124.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| X | 0 | 3 | 6 | 9 |
| Y | -6 | -5 | -4 | -3 |

125.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| X | -1 | 0 | 1 | 2 |
| y | -5 | -2 | 1 | 3 |

**Evaluate each function rule for x = -3.**

126. *f(x)* = -2x – 1

127. *f(x)* = x + 6

**Evaluate each function rule for x = 1.**

128. *f(x)* = -9x – 5

129. *f(x)* = 3x + 12