

1-4-19

Aim: SWBAT continue to translate word problems into mathematical equations.

HW: Packet Pages 12 - 13

Quiz Wednesday

Do Now: What is a profit?

## Homework

Write an algebraic expression or equation to represent each of the following. Remember to read the words carefully to decide if it is an expression or an equation.

	A	B
1	The product of seven and y is sixteen. $7y = 16$	Four times a number increased by eight. let $n = \text{the \#}$ $4n + 8$
2	Sixteen less than a number, x, is 3 more than y. $x - 16 = y + 3$	Ten decreased by x is fifteen decreased by n. $10 - x = 15 - n$
3	Fifty is twelve subtracted from x. $50 = x - 12$	Twice the sum of x and y is three times z. $2(x + y) = 3z$
4	Sixteen is the product of eight and y. $16 = 8y$	Twice the difference of x and three is nine. $2(x - 3) = 9$
5	The quotient of eleven and v is seven minus x. $\frac{11}{v} = 7 - x$	Five times the difference of nine and x. $5(9 - x)$

Solve algebraically.

6. Three times a number decreased by five is forty-nine. What is the number?

ARITHMETIC

$$49 + 5 = 54$$

$$54 \div 3 = 18$$

ALGEBRAIC

Let  $n = \text{the number}$

$$3n - 5 = 49$$

$$\begin{array}{r} \cancel{+5} \quad +5 \\ \hline \end{array}$$

$$\frac{3n}{3} = \frac{54}{3}$$

$$n = 18$$

The number is 18.

7. Mark spent \$15 at the state fair where the admission fee was \$5 and the rides cost \$2 each. How many rides did mark go on?

ARITHMETIC

$$15 - 5 = 10$$

$$10 \div 2 = 5$$

ALGEBRAIC

Let  $x$  = # of rides \_\_\_\_\_

$$\begin{array}{r} 2x = 15 \\ -5 \\ \hline 2x = 10 \\ \div 2 \quad \div 2 \\ \hline x = 5 \end{array}$$

Mark went on  
5 rides.

8. Lou has 36 rocks in his collection. He separated them into equal piles of 9 rocks. How many piles of rocks did Lou separate his collection into?

ARITHMETIC

$$36 \div 9 = 4$$

ALGEBRAIC

Let  $x$  = # of piles of rocks \_\_\_\_\_

$$\begin{array}{r} 9x = 36 \\ \div 9 \quad \div 9 \\ \hline x = 4 \end{array}$$

Lou separated his  
collection into 4 piles.

*Profit: what you make - what it cost*

Aim: SWBAT continue to translate word problems into mathematical equations.

Solve algebraically.

Pg. 137 # 21. You and your friends decide to have a car wash as a fundraiser for the school chorus. You spend \$15 on supplies and charge \$6 per car. At the end of the day, your profit is \$93. How many cars did you and your friends wash?

ARITHMETIC  
 $93 + 15 = 108$   
 $108 \div 6 = 18$

ALGEBRAIC  
 let  $x = \#$  of cars  
 $-15 + 6x = 93$   
 $6x - 15 = 93$   
 $+15 +15$   
 $6x = 108$   
 $\frac{6x}{6} = \frac{108}{6}$   
 $x = 18$

*We must wash 18 cars.*

Pg. 137 #23. You make candles and sell them for \$15 each. The materials to make up to 20 candles cost \$20. How many candles must you sell to have a profit of \$85 after expenses?

ARITHMETIC  
 $85 + 20 = 105$   
 $105 \div 15 = 7$

ALGEBRAIC  
 let  $x = \#$  of candles  
 $15x - 20 = 85$   
 $+20 +20$   
 $15x = 105$   
 $\frac{15x}{15} = \frac{105}{15}$   
 $x = 7$

*I must sell 7 candles.*

Pg. 137 #24: A bicycle rental shop charges \$5 per hour plus a fee of \$10 each time you rent a bike. Which equation can you use to find the number of hours you can rent a bicycle for \$45?

- A)  $5h + 10 = 45$
- B)  $10h + 5 = 45$
- C)  $5 + h + 10 = 45$
- D)  $15h = 45$

Pg. 137 #25: You subscribe to a magazine that costs \$26 yearly. You make an initial payment of \$5 and then make three equal payments. How much is each payment?

ARITHMETIC  
 $26 - 5 = 21$   
 $21 \div 3 = 7$

ALGEBRAIC  
 let  $x = \text{amt. of each payment}$   
 $5 + 3x = 26$   
 $-5 -5$   
 $3x = 21$   
 $\frac{3x}{3} = \frac{21}{3}$   
 $x = 7$

*Each payment will be \$7.*

**Homework**

Solve algebraically.

**Pg. 138 # 30.** You need 124 plastic forks for a party. At one store you buy the last 5 boxes, and each box contains 8 forks. At another store you find boxes that contain 12 forks. How many of these boxes do you need to buy?

**ARITHMETIC**

**ALGEBRAIC**

**Pg. 138 # 31.** The senior class at your school made a \$300 profit at the school fair by having a dunk tank. The dunk tank cost \$135 to rent, and the senior class charged \$5 for each person to play. If one third of people who participated were adults, how many adults participated?

**ARITHMETIC**

**ALGEBRAIC**

**Pg. 138 # 33.** A taxi cab costs \$2 plus an additional \$1.50 for every mile. Your ride costs \$17 before the tip. How many miles did you go? Will it cost twice as much to go twice as far? Explain.

**ARITHMETIC**

**ALGEBRAIC**

Pg. 138 # 35. You have a job in which you make \$6 an hour plus tips. You made a total of \$34 yesterday. How much did you make in tips?

ARITHMETIC

ALGEBRAIC

Pg. 138 # 38. Amanda takes her car to the repair shop. The mechanic starts working on the car at 10:30 A.M., takes a 45 minute lunch break, and then continues working into the afternoon. The parts to fix the car cost \$350 and the labor costs \$80 per hour. Amanda pays \$730 in all. At what time does the mechanic finish the work?

ARITHMETIC

ALGEBRAIC