

1-10-19

Aim: SWBAT translate word problems into mathematical equations.

HW: Packet Pages 8 and Packet Page 12 "Forks" questions
Quiz Monday

Do Now: Check hw

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. You 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

$$17 - 2 = 15$$

$$15 \div 1.50 = 10$$

ALGEBRAIC

let $x = \#$ of miles

$$\begin{array}{r} 2 + 1.50x = 17 \\ -2 \quad -2 \\ \hline 1.50x = 15 \\ \frac{1.50}{1.50} \quad \frac{15}{1.50} \\ x = 10 \end{array}$$

I went 10 miles

$$2 + 1.50x$$

$$2 + (1.50)(20)$$

$$2 + 30$$

$$32$$

No, going twice as far will cost \$32, not \$34.

12

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

I don't know. It depends on how many hours I worked.

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

Translating When a Variable Is Not Assigned

- Define a variable {state what the variable represents using let statement(s)}
- Identify the key words
- Translate into the order that the keywords require using the assigned variable
- Equations will contain one or more operations {+, -, ·, or ÷ (use a fraction bar to translate division)} and an equal sign.

To "Solve Algebraically" means...

- Define a variable
- Write an algebraic equation to represent the situation
- Solve the equation
- Echo back the question in a sentence that answers the question being asked

Solve algebraically.

3. Nicholas has 28 coins in his collection. That is 5 more than his brother Sam has in his collection. How many coins does Sam have in his collection?

ARITHMETIC
 $28 - 5 = 23$

ALGEBRAIC
Let $x = \#$ of coins Sam has _____
$$\begin{array}{r} 28 = x + 5 \\ -5 \quad -5 \\ \hline 23 = x \end{array}$$
 Sam has 23 coins.

4. Mr. Edwards purchased 3 bags of potatoes. He bought 36 potatoes in all. Each bag contained the same number of potatoes. How many potatoes were in each bag?

ARITHMETIC
 $36 \div 3 = 12$

ALGEBRAIC
Let $x = \#$ of potatoes _____
$$\begin{array}{r} 3x = 36 \\ \cancel{3} \quad 3 \\ \hline x = 12 \end{array}$$
 Each bag has 12 potatoes.

7

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?

<p>ARITHMETIC</p> $93 + 15 = 108$ $108 \div 6 = 18$	<p>ALGEBRAIC</p> <p>let $x = \#$ of cars</p> $-15 + 6x = 93$	$6x - 15 = 93$ $+15 \quad +15$ <hr/> $6x = 108$ $\frac{6x}{6} = \frac{108}{6}$ $x = 18$	<p><i>We must wash 18 cars.</i></p>
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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?

<p>ARITHMETIC</p> $85 + 20 = 105$ $105 \div 15 = 7$	<p>ALGEBRAIC</p> <p>let $x = \#$ of candles</p>	$15x - 20 = 85$ $+20 \quad +20$ <hr/> $15x = 105$ $\frac{15x}{15} = \frac{105}{15}$ $x = 7$	<p><i>I must sell 7 candles.</i></p>
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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?

<p>ARITHMETIC</p> $26 - 5 = 21$ $21 \div 3 = 7$	<p>ALGEBRAIC</p> <p>let $x = \text{amt. of each payment}$</p> $5 + 3x = 26$ $-5 \quad -5$ <hr/> $3x = 21$ $\frac{3x}{3} = \frac{21}{3}$ $x = 7$	<p><i>Each payment will be \$7.</i></p>
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5. Phoebe is 3 years less than half her brother's age. Phoebe is 13 years old. How old is Phoebe's brother?

ARITHMETIC

ALGEBRAIC

Let _____ = _____

6. Nigel went to an ice rink and paid \$5 admission plus an additional \$2.50 per hour to rent skates. The total cost was \$15. For how many hours did Nigel rent skates?

ARITHMETIC

ALGEBRAIC

Let _____ = _____

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