#### Unit 4

**Applying Linear Equations** 

ALGEBRA 1

## **Word Problem**

Carson is a salesman at an insurance company. He receives a monthly salary of \$1,236.00 and a \$215.00 commission on each policy he sells. If Carson receives his commission check at the end of the month along with his salary check, which of the following equations can be used to determine his total pay for the month.

(Let x represent the number of policies sold and y represent the total amount of pay for the month.)

- y = 215x
- y = 21.5x + 1,236
- ઼ y = 215x + 1,236

y = 1,236x + 215

215.00 < varies (needs variable 1236.00 = constant w/o varial

### Word Problem

A rental car company charges a base fee of \$38.85 plus \$0.42 per mile driven. If x represents the number of miles driven, which of the following equations could be used to find y, the total cost of the bill?

- (A.) y = \$0.42x + \$38.85
- y = \$38.85x + \$0.42
- y = \$39.27x
- y = \$0.72x + \$38.85
- 38.85 ~ constant
- 0.42 < varies

### Word Problem

A company has fixed operating costs of \$1,976.00 per month with a production cost of \$13.23 per unit. If each unit brings \$33.57 in revenue, which of the following equations represents the profit for the month?

(Let x represent the number of units made per month Note: Profit is the money left after taking the costs out and y represent the total profit for the month. tof the revenue.)

- y = 13.23x 1,976
- y = 33.57x 1,976
- ုဂ y = 20.34x - 1,976
- y = 46.8x 1,976

Ö

3,57 5,23

9/3/2019

#### Word Problem

Marcus works as a salesman at a car dealership. He is paid a base salary of \$1,176.25 each month, and he receives a commission of \$193.76 for each vehicle he sells. If last month Marcus earned \$6,795.29, how many cars did he sell last month?

injustrated in Step 8.

Word Problem

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41

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70

6795.29 -1176.25

5619.04 - 193.76

#### **Word Problem**

Meghan is completing her chemistry and geometry homework. Each chemistry assignment has x problems, and each geometry assignment has y problems. She must complete a total of 71 problems. The equation below describes the relationship between the number of chemistry problems and the number of geometry problems.

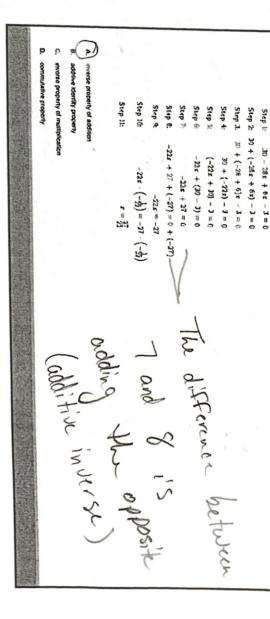
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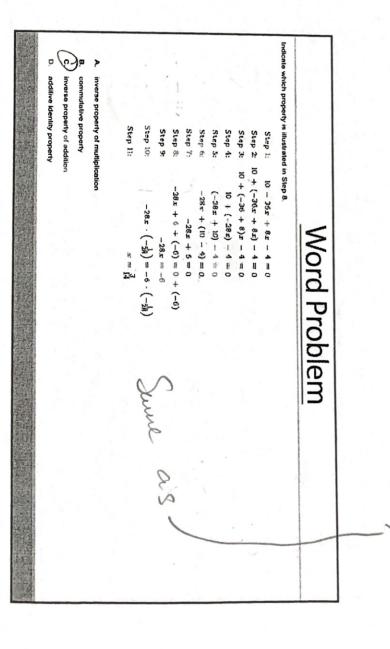
4x + 3y = 71

The ordered pair (5, 17) is a solution of the equation. What does the solution (5, 17) represent?

- Meghan must complete 5 chemistry assignments and 17 geometry assignments.
- B. Meghan spent 5 minutes on her chemistry homework and 17 minutes on her geometry homework.
- C.) Each chemistry assignment contains 5 problems and each geometry assignment contains 17 problems.
- Meghan must complete 12 more geometry assignments than chemistry assignments

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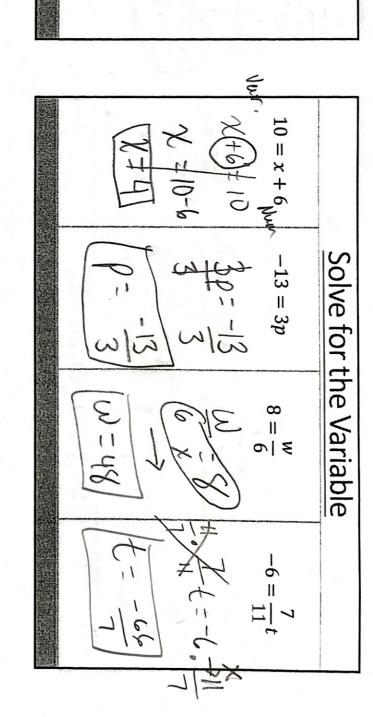


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#### Unit 4

Solving Linear Equations

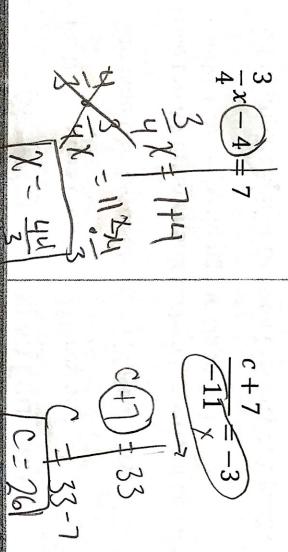
ALGEBRA 1



# Steps for Solving an Equation

- 1. Do Distributive Property (If Necessary)
- 2. Combine Like Terms (+or -) (If Necessary)
- 3. Use the Addition or Subtraction Property of Equality (Undo + or by doing the Opposite)
- 4. Use Multiplication or Division Property of Equality (Undo  $x\ or\ \div$  by doing the Opposite)

# Solve the Equation

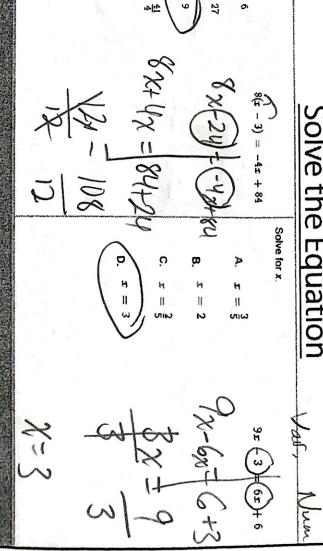


$$\frac{c+7}{211} = -3$$

$$\frac{c+7}{2} = 3$$



Solve for m.



Solve the Equation 10-14 10-14 10-14 10-14 Jac

20(30) 12

2p=12+80 \$p=42 \$=2