

## Math 7 - Unit 2b

## Day 12 - Writing Equations from Story Contexts

## Lesson Objectives:

- I can write linear equations from story contexts.
- I can write grade-level story contexts using linear equations.
- I know how to show work when solving equations.

To translate a verbal phrase into an equation, the first step is to define a variable. When you **define a variable**, you choose a variable to represent an unknown quantity.

Marisa wants to buy a DVD player that costs \$150. She already saved \$25 and plans to save an additional \$10 each week. Write an ~~expression~~ **equation** that represents the total amount of money Marisa has saved after any number of weeks.

Define the variable:  $w = \text{the number of weeks}$

Equation:  $150 = 10w + 25$

$$\begin{array}{r} 150 = 10w + 25 \\ -25 \quad -25 \quad \text{Subtract Prop.} \\ \hline 125 = 10w \\ \frac{125}{10} = \frac{10w}{10} \quad \text{Divide Prop. (=)} \\ 12.5 \text{ weeks} = w \end{array}$$

Leah has already read 20 pages of a book. She plans to read 5 pages each day from now on. Write an equation that represents the total number of pages she will have read in d days. After how many days will she have read 100 pages?

Define the variable:  $d = \# \text{ of days}$

Equation:  $5d + 20 = 100$

A rectangle has side lengths  $(2x - 5)$  meters and  $(2x + 6)$  meters. Write an equation represent when the perimeter will be 40 meters.

Define the variable:  $x = \text{a number}$

Linear equation:

$$2(2x-5) + 2(2x+6) = 40$$

$$4x - 10 + 4x + 12 = 40$$

$$8x + 2 = 40$$

$$\frac{8x}{8} = \frac{38}{8}$$

$$x = \frac{19}{4} = 4\frac{3}{4} = 4.75$$

$$2(2x-5) = 40$$

$$4x - 10 = 40$$

$$4x = 50$$

$$\frac{4x}{4} = \frac{50}{4}$$

$$x = \frac{25}{2} = 12.5$$

$$2(2x+6) = 40$$

$$4x + 12 = 40$$

$$4x = 28$$

$$\frac{4x}{4} = \frac{28}{4}$$

$$x = 7$$

If Jill has 20 boxes of macaroni. Each box weighs the same amount. She also has a container of cheese sauce that weighs 50 ounces. Everything together weighs 195 ounces. How much does one box of macaroni weigh?

Define the variable:

Linear equation:

## Story Context

- |    |    |
|----|----|
| a. | g. |
| b. | h. |
| c. | i. |
| d. | j. |
| e. |    |
| f. |    |

## Homework

## Writing Equations from Stories WKS

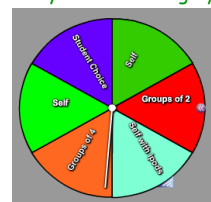
## \* Individual Think Time \*

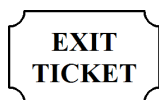


## What to do if you get stuck...

- Reread the problem. Did you write it down correctly?
- Reread your notes. Is there a problem similar that we did together in class?
- Find a problem similar in your book. Try this one to see if it helps.
- Skip the problem until the end of Individual Think Time. Then ask an "educated" question of a neighbor or Mrs. Call.

Today we're working by...





3...2...1...

On a piece of paper write down

3 things you learned,

2 questions you still have, and

1 connection you'd like to share.