

Honors Algebra 1 - Chapter 2 HW #1

Name: _____

Date: _____

Period: _____

(source: SP33)

EXAMPLE 1:

John and Javier are entered in the intramural cookie eating contest. John eats cookies at the rate of 6 cookies per minute while Javier eats them at the rate of 8 cookies per minute. Each person was given a plate which was supposed to have 72 cookies on it. However, someone had miscounted and John's plate had only 58 cookies on it. When will they have the same number of cookies?

<p>Key Info (draw picture):</p> <p><u>John - 6 Cookies/min</u> <u>HAS only 58 cookies</u></p> <hr/> <p><u>Javier - 8 Cookies/min</u> <u>72 Cookies</u></p>	<p>Define Equation: <u>John = Javier</u></p> <p>Solve: <u>$58 - 6x = 72 - 8x$</u> <u>$2x = 14$</u> <u>$x = 7$</u></p> <p>Check <u>$58 - 6(7) = 72 - 8(7)$</u> <u>$16 = 16$</u></p>
<p>Define Variable - remember units:</p> <p><u>$m = \#$ minutes they have eaten, Cookies</u></p>	
<p>Answer (in words) <u>John and Javier will both have 16 cookies left at 7 minutes</u></p>	

Answer these questions

Let m be the number of minutes they have eaten.

- a.
 - i. Write an expression for the number of cookies left on Javier's plate after m minutes. $72 - 8m$
 - ii. Write an expression for the number of cookies left on John's plate after m minutes. $58 - 6m$
- b.
 - i. Write an equation which states that they have the same number of cookies on their plates. $72 - 8m = 58 - 6m$
 - ii. Solve the equation in part i to find out how many minutes have passed before they have the same number of cookies remaining. And how many cookies do they each have? 7 MINUTES
16 Cookies left
- c. How many cookies does each one have after 1 minute, 2 minutes, 8 minutes?

		1 minute	2 minute	8 minute
<u>$72 - 8x$</u>	→	Javier	<u>64</u>	<u>56</u>
<u>$58 - 6x$</u>	→	John	<u>52</u>	<u>46</u>

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EXAMPLE 2:

Than and Sam are reading books for English. Than's book has 235 pages while Sam's book has 358. Than found that she averaged reading 18 pages per hour while Sam averaged about 28. While talking about how long it took them to read their respective books, they found that they read about the same length of time.

When will they have the same number of pages left to read?

Key Info (draw picture):

THAN - 235pg book
18 pages/hour

Sam - 358 pg book
28 pages/hour

Define Variable - remember units:

$h =$ # of hours read

Define Equation: $THAN = SAM$

Solve:

$$\begin{array}{r} 235 - 18H = 358 - 28H \\ -235 + 28H \quad -235 + 28H \\ \hline 10H = 123 \\ \frac{10}{10} \quad \frac{123}{10} \\ \hline H = 12.3 \end{array}$$

Check

$$\begin{array}{l} C: 235 - 18(12.3) = 358 - 28(12.3) \\ 13.6 = 13.6 \checkmark \end{array}$$

Answer (in words)

After reading 12.3 hours they will have 13.6 pages left.

Answer these questions

Let h be the number of hours they read.

- Write an expression for the number of pages Than has read. 18H
 - Write an expression for the number of pages Than has remaining to be read. 235 - 18H
 - Write an expression for the number of pages Sam has read. 28H
 - Write an expression for the number of pages Sam has remaining to be read. 358 - 28H
- Who has more left to read after reading 6 hours? Sam has 63 (190 - 127) MORE PAGES.
 How many pages? Than = 235 - 18(6) = 127pg Sam = 358 - 28(6) = 190pgs
- Write an equation which states that Sam has finished his book. (That means 0 pages remaining.) Solve the equation to discover how long it will take him to read his book. _____

EQ: $358 - 28H = 0$

$$\begin{array}{r} 358 = 28H \\ 28 \quad 28 \\ \hline H = 12.8 \text{ hrs} \end{array}$$

$H = 12.8 \text{ hrs}$

$$358 - 28(12.8) = 0$$

$$-0.4 \approx 0 \checkmark \text{ ROUNDING ERROR}$$

c) REMEMBER: Solve, check, write answer in sentence

OR 12.74 pages

Sam will finish his book in about 12.8 hrs