

U3D9_T Unit Rate Story Questions

Sunday, March 4, 2018 8:15 PM



U3D9_T
Unit Rate ...

U3D9 Warm Up:

Lake Ontario is four times as deep as Lake Erie. The sum of their depths is 300 m. What is the depth of each lake? Set up and solve the "Number Story Question".

Let e , $4e$ represent the depths of Lake Erie and Lake Ontario (m)

$$e + 4e = 300$$

$$\frac{5e}{5} = \frac{300}{5}$$

$$e = 60$$

$$\begin{aligned} 4e &= 4(60) \\ &= 240 \end{aligned}$$

set
up

\therefore Lake Erie is 60m deep, Lake Ontario is 240m deep.

"Unit Rate" Story Questions

	Examples				
Unit Rate Δ/\blacksquare	Value/Coin	Km/h	Points/Goal	Cost(\$)/Ticket	Cost(\$)/kg
Number of \blacksquare	Number of Coins	Number of Hours	Number of Goals	Number of Tickets	Number of kg
Total Δ	Total Value	Total km	Total Points	Total Cost(\$)	Total Cost(\$)

Example 1: Write an equation using only one variable to represent each unit rate situation. Use a unit rate chart to help you. If you do not use a chart, you must write a let statement to represent the variable chosen. Set-up and solve each of the following.

- a) Ben plays on the W-O basketball team. He gets 2 points if he gets a basket inside the three-point line and 3 points if he gets a basket outside the three-point line. He scored 61 baskets giving him 140 points in the season. How many 2-point and 3-point shots did he make in his season?

 	Inside	Outside	TOTAL
Points/basket	2	3	X
Number of baskets	x	61-x	61
Total Points	2x	3(61-x)	140

$$2x + 3(61-x) = 140$$

$$2x + 183 - 3x = 140$$

$$-x + 183 - 183 = 140 - 183$$

$$-x = -43$$

$$x = 43$$

$$\begin{aligned} 61-x \\ = 61-43 \\ = 18 \end{aligned}$$

∴ he scored 43 baskets inside the 3 point line and 18 baskets outside.

b) You make a new coffee mixture that combines Coffee A and Coffee B that costs \$5.56/lb. If Coffee A costs \$6.15/lb and Coffee B costs \$3.20/lb, how much of each kind of Coffee are needed to make up a 15 pound mixture?

X	Coffee A	Coffee B	Mixture
\$/lb	6.15	3.20	5.56
Number of lb's.	x	$15-x$	15
Total \$	$6.15x$	$3.2(15-x)$	83.4

\downarrow multiply

$$\begin{array}{r} 5.56 \\ \times 15 \\ \hline 83.40 \end{array}$$

$$6.15x + 3.2(15-x) = 83.4$$

c) Noah had \$4.25 in nickels and dimes. If he has 54 coins altogether, how many of each does he have?

X	Nickels	Dimes	Total
¢/coin	5	10	X
Number of coins	x	$54-x$	54
Total ¢	$5x$	$10(54-x)$	425

convert
\$4.25
to 425¢

$$5x + 10(54 - x) = 425$$