

Worksheet 3.5 Unit Rate Story Questions Pg 1 of 3

1.

	loonies	toonies	total
$\$/\text{coin}$	1	2	
number of coins	x	$32-x$	32
total $\$$	x	$2(32-x)$	43

$$x + 2(32 - x) = 43$$

$$x + 64 - 2x = 43$$

$$-x + 64 = 43$$

$$-64 \quad -64$$

$$-x = -21$$

$$x = 21$$

$$\begin{aligned} 32 - x &= 32 - 21 \\ &= 11 \end{aligned}$$

\therefore there are 21 loonies and 11 toonies.

2.

	destroyer	submarine	total
points/hit	5	3	
number of hits	x	$10-x$	10
total points	$5x$	$3(10-x)$	36

$$5x + 3(10 - x) = 36$$

$$5x + 30 - 3x = 36$$

$$2x + 30 = 36$$

$$-30 \quad -30$$

$$2x = 6$$

$$\frac{2}{2} \quad \frac{6}{2}$$

$$x = 3$$

$$\begin{aligned} 10 - x &= 10 - 3 \\ &= 7 \end{aligned}$$

\therefore Dawn hit 3 destroyers and 7 submarines.

3.

	dimes	quarters	total
ϕ/coin	10	25	
no. of coins	x	$54-x$	54
total ϕ	$10x$	$25(54-x)$	1065 \leftarrow ind

$$10x + 25(54 - x) = 1065$$

$$10x + 1350 - 25x = 1065$$

$$-15x + 1350 = 1065$$

$$-1350 \quad -1350$$

$$-15x = -285$$

$$-15 \quad -15$$

$$x = 19$$

\therefore there are 19 dimes (and 35 quarters).

3.5 Solutions.

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4.	students	adults	total
#/ticket	4	6.50	X
no. of tickets	$2x$	x	X
total \$	$8x$	$6.50x$	667

$$8x + 6.50x = 667$$

$$14.50x = 667$$

$$\frac{14.5}{14.5} \quad \frac{667}{14.5}$$

$$x = 46$$

$$2x = 2(46)$$

$$= 92$$

∴ 46 adults and 92 students go to the show.

5.	cranberries	raisins	total
#/kg	4	9	6
no. of kg	x	$15-x$	15
total \$	$4x$	$9(15-x)$	90 $\downarrow 6 \times 15 = 90$

$$4x + 9(15-x) = 90$$

$$4x + 135 - 9x = 90$$

$$-5x + 135 = 90$$

$$\frac{-135}{-5} \quad \frac{-135}{-5}$$

$$-5x = -45$$

$$\frac{-5}{-5} \quad \frac{-45}{-5}$$

$$x = 9$$

$$15-x$$

$$= 15-9$$

$$= 6$$

∴ the mixture contains 9kg of cranberries, 6kg of yogurt-covered raisins.

3.6 Solutions.

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6.

	Hard Candy	Soft Candy	total
#/kg	2	4	2.50
no. of kg	x	$60-x$	60
total \$	$2x$	$4(60-x)$	150 $\swarrow 2.5 \times 60$

set
up.

$$2x + 4(60 - x) = 150$$

$$2x + 240 - 4x = 150$$

$$-2x + 240 = 150$$

$$\begin{array}{r} -240 \quad -240 \\ -2x + 240 = 150 \\ \hline -2x = -90 \end{array}$$

$$\begin{array}{r} -2x = -90 \\ \hline -2 \quad -2 \\ \hline x = 45 \end{array}$$

$$x = 45$$

$$\begin{array}{r} 60 - x \\ = 60 - 45 \\ = 15 \end{array}$$

\therefore the mixture contains 45 kg of hard candy and 15 kg of soft candy.

Worksheet 3.5 UNIT RATE STORY QUESTIONS

Unit Rate Questions (Chart Questions)

			Total
Unit Rate <input type="text"/> / <input type="text"/>			
Number of <input type="text"/>			
Total <input type="text"/>			

Provide full solutions for the following story questions.

1. Linda has \$43 in loonies and toonies. If she has 32 coins altogether, how many of each does she have?
2. At a carnival shooting gallery you get five points for hitting a destroyer and three points for hitting a submarine. Dawn scored 36 points with 10 hits. How many submarines did she hit?
3. Sam has \$10.65 made up of dimes and quarters. If there are 54 coins in all, how many dimes are there?
4. On a particular evening, twice as many students as adults go to a show. Student tickets costs \$4 and adult tickets cost \$6.50. If ticket sales are \$667, how many students and adults go to the show?
5. A grocery store is making up a mixture of cranberries and yogurt-covered raisins that costs \$6/kg. If the cranberries cost \$4/kg and the yogurt-covered raisins cost \$9/kg, how much of each kind are needed to make up a 15 kg mixture?
6. Hard candy is \$2/kg and soft candy is \$4/kg. How many kilograms of each candy must be mixed to obtain 60 kg of candy that would be worth \$2.50/kg?

Answers:

1. 21 loonies and 11 toonies 2. 3 destroyers and 7 submarines 3. 19 dimes 4. 46 adults and 92 students
5. 6 kg of yogurt-covered raisins and 9 kg of cranberries 6. 45 hard candies and 15 soft candies