Name: _____

Date: _____

Cross Multiplying to Find an Unknown - Set 2

Instructions: For each of these proportions (without units), use the cross-multiplying procedure you learned in the video to solve for the unknown number 'n'. You can use a calculator for this set.

1

$$\frac{n}{7} = \frac{2}{5}$$

$n \times 5 = 7 \times 2$

$$\frac{n \times 5}{5} = \frac{14}{5}$$

$n = 2.8$

2

$$\frac{8}{n} = \frac{15}{6}$$

$8 \times 6 = n \times 15$

$$\frac{48}{15} = \frac{n \times 15}{15}$$

$n = 3.2$

3

$$\frac{n}{5} = \frac{3}{10}$$

$n \times 10 = 5 \times 3$

$$\frac{n \times 10}{10} = \frac{15}{10}$$

$n = 1.5$

4

$$\frac{7}{12} = \frac{n}{6}$$

$7 \times 6 = 12 \times n$

$$\frac{42}{12} = \frac{12 \times n}{12}$$

$n = 3.5$

5

$$\frac{3}{5} = \frac{n}{32}$$

$3 \times 32 = 5 \times n$

$$\frac{96}{5} = \frac{5 \times n}{5}$$

$n = 19.2$

6

$$\frac{4}{3} = \frac{51}{n}$$

$4 \times n = 3 \times 51$

$$\frac{4 \times n}{4} = \frac{153}{4}$$

$n = 38.25$

7

$$\frac{5}{7} = \frac{1.2}{n}$$

$5 \times n = 7 \times 1.2$

$$\frac{5 \times n}{5} = \frac{8.4}{5}$$

$n = 1.68$

8

$$\frac{n}{10} = \frac{3}{2.5}$$

$n \times 2.5 = 10 \times 3$

$$\frac{n \times 2.5}{2.5} = \frac{30}{2.5}$$

$n = 12$

Proportion Word Problems - Set 2

Instructions: Use proportions to answer each of these word problems. You can use a calculator.

1 A rain gauge collected 0.2 inches of rain in 30 minutes. If it keeps raining at the same rate, what's the total time it will take to collect 1 inch of rain?

$$\frac{0.2 \text{ in}}{30 \text{ min}} = \frac{1 \text{ in}}{n \text{ min}}$$

$$0.2 \times n = 30 \times 1$$

$$\frac{0.2 \times n}{0.2} = \frac{30}{0.2}$$

$$n = 150 \text{ min}$$

2 A biologist counted 15 squirrels in 3 acres of forest. Based on that data, how many squirrels would be expected to inhabit a 275 acre forest?

$$\frac{15 \text{ squirrels}}{3 \text{ acres}} = \frac{n \text{ squirrels}}{275 \text{ acres}}$$

$$15 \times 275 = 3 \times n$$

$$\frac{4,125}{3} = \frac{3 \times n}{3}$$

$$n = 1,375 \text{ squirrels}$$

3 A runner burned 120 calories on a 1.6 km run. How many calories would they burn on a 5 km run?

$$\frac{1.6 \text{ km}}{120 \text{ cal}} = \frac{5 \text{ km}}{n \text{ cal}}$$

$$1.6 \times n = 120 \times 5$$

$$\frac{1.6 \times n}{1.6} = \frac{600}{1.6}$$

$$n = 375 \text{ cal}$$

4 If 3 oranges cost $1.75, how much would 20 oranges cost?

$$\frac{3 \text{ oranges}}{1.75 \text{ dollars}} = \frac{20 \text{ oranges}}{n \text{ dollars}}$$

$$3 \times n = 1.75 \times 20$$

$$\frac{3 \times n}{3} = \frac{35}{3}$$

$$n = \$11.67$$

5 If it takes 2.3 gallons of milk to make 2 pounds of cheese, how many pounds of cheese can you make with 50 gallons of milk?

$$\frac{2.3 \text{ gal}}{2 \text{ lbs}} = \frac{50 \text{ gal}}{n \text{ lbs}}$$

$$2.3 \times n = 2 \times 50$$

$$\frac{2.3 \times n}{2.3} = \frac{100}{2.3}$$

$$n = 43.5 \text{ lbs}$$

6 If you need 8 oz of chocolate chips to make 1.6 lbs of cookie dough, how many ounces of chocolate chips will you need to make 7 pounds of cookie dough?

$$\frac{8 \text{ oz}}{1.6 \text{ lbs}} = \frac{n \text{ oz}}{7 \text{ lbs}}$$

$$8 \times 7 = 1.6 \times n$$

$$\frac{56}{1.6} = \frac{1.6 \times n}{1.6}$$

$$n = 35 \text{ oz}$$

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