

Do Now: Find the value of the variable.

1.) $\frac{x}{7} = \frac{3}{21}$ $x = 1$

2.) $\frac{8}{25} = \frac{40}{k}$ $k = 125$

3.) $\frac{6}{15} = \frac{f}{35}$ $f = 13.8$

$35 \div 15 = 2.\bar{3} = (2.3)$

$6(2.3) = 13.8$

7.2 Writing and Solving Proportions

7.RP

- SWBAT write and solve proportions.
- SWBAT apply proper techniques to find measures.

Calculators: Yes

Cross Products Property

The cross product of a proportion are equal

$$\frac{a}{b} = \frac{c}{d}$$

$$a \cdot d = b \cdot c$$

Do Now

① $\frac{x}{7} = \frac{3}{21}$ $21(x) = 7(3)$
 $\frac{21x}{21} = \frac{21}{21}$
 $x = 1$

② $\frac{8}{25} = \frac{40}{k}$ $8k = 25(40)$
 $\frac{8k}{8} = \frac{1000}{8}$
 $k = 125$

③ $\frac{6}{15} = \frac{f}{35}$ $15f = 6(35)$
 $\frac{15f}{15} = \frac{210}{15}$
 $f = 14$

Solve the proportion.

1. $\frac{n}{12} = \frac{3}{4}$

2. $\frac{50}{20} = \frac{z}{16}$

$$3. \quad \frac{6.8}{15.4} = \frac{40.8}{1n} \quad \frac{68}{154} = \frac{408}{10n}$$

$$\frac{6.8}{15.4} = \frac{40.8}{n}$$

$$\frac{68}{154} = \frac{408}{10n}$$

$$6.8n = 40.8(15.4)$$

$$10n(68) = 408(154)$$

$$\frac{6.8n}{6.8} = \frac{628.32}{6.8}$$

$$\frac{680n}{680} = \frac{62,832}{680}$$

$$n = 92.4$$

$$n = 92.4$$

Solve the proportion.

$$1. \quad \frac{250}{30} = \frac{t}{51}$$

$$2. \quad \frac{7.2}{4.8} = \frac{16.2}{z}$$

Solve the proportion.

$$x + x = 2x$$

$$2 + x = 2 + x$$

$$1. \quad \frac{30}{2+x} = \frac{6}{7}$$

$$7(30) = 6(2+x)$$

$$210 = 12 + 6x$$

$$\frac{198}{6} = \frac{6x}{6}$$

$$33 = x$$

Solve the proportion.

$$2. \quad \frac{9}{5} = \frac{36}{x-3}$$

$$9(x-3) = 5(36)$$

$$9x - 27 = 180$$

$$\frac{9x}{9} = \frac{207}{9}$$

$$x = 23$$

An adult rhinoceros beetle weighs only 0.525 ounces and can carry about 446.25 ounces on its back. If a person was proportionally strong, how much could a 100 pound person carry?

Rhino Ratio = Person Ratio

$$\frac{\text{Weight (Rhino)}}{\text{Carry (Rhino)}} = \frac{\text{Weight (Person)}}{\text{Carry (Person)}}$$

$$\frac{0.525 \text{ oz}}{446.25 \text{ oz}} = \frac{100 \text{ pounds}}{x \text{ pounds}}$$

$$0.525(x) = 446.25(100)$$

$$\frac{0.525x}{0.525} = \frac{44,625}{0.525}$$

$$x = 85,000$$

A 100 pound person could carry 85,000 pounds.

Ryan's car can go about 380 miles on 12 gallons of gas. About how many gallons will his car use to travel 2000 miles? Round to nearest tenth.

$$\frac{\text{(Normal) Miles}}{\text{Gallons}} = \frac{\text{(Trip) Miles}}{\text{Gallons}}$$

$$\frac{380 \text{ miles}}{12 \text{ gallons}} = \frac{2000 \text{ miles}}{x \text{ gallons}}$$

$$63.2 \text{ gallons}$$

The dimensions of a **scale model** are proportional to the dimensions of the actual object.

The **scale** is written as a ratio.

Strawberry Point, Iowa, has a strawberry sculpture that is 15 feet tall. If the scale of this model is 10 feet to 1 inch, how tall was the actual strawberry?

An architect draws a blueprint for the front of a townhouse. On the blueprint, the townhouse is 50 centimeters wide. If the scale of the blueprint is 1 centimeter to 0.5 meter, how wide is the front of the townhouse?

Exit Pass 7.2

Describe and correct the error in solving the proportion.

$$\frac{3}{9} = \frac{12}{m}$$

$$9m = 3 \cdot 12$$

$$9m = 36$$

$$m = 4$$

"Don't blame the sea if you cannot catch a fish."

Working individually or with a partner, complete the workbook.

Workbook pg.



Reflection of Today's Lesson

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Calculators: Yes

Homework

(A) #12-18 evens
#29, 30

pg. 325 ~~#11-25 odds, 29, 30~~



(B) #13-19 odds.
#29, 30