

HW: Worksheet/11-20, 33-36

Warm up:

proportions

Solve.

1)

$$\frac{24}{13} = \frac{a}{26}$$

$$13 \cdot a = 24 \cdot 26$$

$$\frac{13a}{13} = \frac{624}{13}$$

$$a = 48$$

2)

$$\frac{2.8}{4} = \frac{7}{q}$$

$$\frac{2.8q}{2.8} = \frac{28}{2.8}$$

$$q = 10$$

Are the following ratios propotional?

$$\frac{16}{10} \stackrel{?}{=} \frac{24}{15}$$

$$16 \cdot 15 \stackrel{?}{=} 10 \cdot 24$$

$$240 = 240$$

yes

$\neq$

~~$\frac{6}{18} = \frac{9}{25}$~~

$6 \cdot 25 \stackrel{?}{=} 9 \cdot 18$

$150 \neq 162$

no

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**COOKING** Theo wants to use a cookie recipe that makes 36 cookies but he wants to reduce the number of cookies to 24. If the recipe specifies using 2 cups of sugar, how much sugar should he use?

~~$$\frac{36}{2} = \frac{24}{x}$$~~

$$\frac{36x}{36} = \frac{48}{36}$$

$$x = \frac{48}{36} = \frac{4}{3} = \frac{1}{3} \text{ c}$$

~~$$\frac{36}{24} \times \frac{2}{x}$$~~

~~$$\frac{2}{36} \times \frac{x}{24}$$~~

**LABOR** Ed earned \$112 for 8 hours of work. At this rate, how much will he earn for 40 hours of work?

$$\frac{112}{8} = \frac{x}{40}$$

$$\$560$$

$$\frac{8x = 4480}{8 \quad 8}$$

$$x = 560$$

$$112 \cdot 5 = 560$$

**MODELS** An architect built a model of a 220-foot tall building he is designing. The model is 25 inches tall and 10 inches wide. How wide is the actual building?

$$\frac{220}{25} = \frac{x}{10}$$

$$\frac{25x = 2200}{25} \quad \frac{2200}{25}$$
$$x = 88$$

$$88 \text{ ft}$$

A store sells 9 apples for \$4.11 and 12 apples for \$5.49. Is the cost proportional to the number of apples purchased?

$$\frac{9}{4.11} \stackrel{?}{=} \frac{12}{5.49}$$

$$9 \cdot 5.49 \stackrel{?}{=} 12 \cdot 4.11$$

$$49.41 \neq 49.32$$

no

## HW Solutions

⑫

$$\frac{2}{5} \div \frac{1}{2}$$

$$\frac{2}{5} \cdot \frac{2}{1} = \frac{4}{5} \text{ mi/min}$$

$$\frac{4}{5} \cdot \frac{60}{1} = 12$$

48 mi/h



⑮

$$28\frac{1}{2} \div 1\frac{1}{6}$$

$$\frac{57}{2} \div \frac{7}{6}$$

$$\frac{57}{\cancel{2}_1} \cdot \frac{\cancel{6}^3}{7} = \frac{171}{7} = 24\frac{3}{7}$$

1) Are the following ratios proportional?

$$\frac{\$4.96}{8 \text{ oz}} \stackrel{?}{=} \frac{\$3.72}{6 \text{ oz}}$$

2) Yesterday, John cut down 8 trees in 3 hours. Today, he cut down 12 trees in 5 hours. Is his time proportional to the number of trees he cut down?

4) **MEDICINE** In order to determine her pulse rate, June's nurse counted 18 beats in her pulse in 15 seconds. At this rate, how many beats would she have in 60 seconds?

3) **TRAVEL** Rita traveled 1,250 miles in the first 3 days of her trip. At this rate, how long will it take her to travel 1,875 miles?

5) **TESTING** Mary is preparing for her college entrance exams. In a practice test, she answered 12 problems in 30 minutes. At this rate, how many questions can she expect to answer in 150 minutes?

1) Are the following ratios propotional?

$$\frac{\$4.96}{8 \text{ oz}} = \frac{\$3.72}{6 \text{ oz}}$$

$$29.76 = 29.76$$

YES

2) Yesterday, John cut down 8 trees in 3 hours. Today, he cut down 12 trees in 5 hours. Is his time proportional to the number of trees he cut down?

$$\frac{8}{3} \neq \frac{12}{5}$$

$$40 \neq 36$$

no

3) TRAVEL Rita traveled 1,250 miles in the first 3 days of her trip. At this rate, how long will it take her to travel 1,875 miles?

$$\frac{1250}{3} = \frac{1875}{x}$$

4) **MEDICINE** In order to determine her pulse rate, June's nurse counted 18 beats in her pulse in 15 seconds. At this rate, how many beats would she have in 60 seconds?

5) **TESTING** Mary is preparing for her college entrance exams. In a practice test, she answered 12 problems in 30 minutes. At this rate, how many questions can she expect to answer in 150 minutes?

