

2.6-2.7 Practice

1. A girl scout troop uses 14 flashlight batteries on a three-night camping trip. If they are planning a seven-night trip, how many batteries should they bring?

$$\frac{14 \text{ batteries}}{3 \text{ nights}} = \frac{x}{7 \text{ nights}}$$

$$\frac{3x}{3} = \frac{98}{3}$$

$$x = 32.6\overline{6} \dots$$



33 batteries

2. Geologists in Antarctica find an average of 7 meteorite fragments in every 500 tons of gravel they sift through. How much gravel must they sift through in order to get 100 fragments?

$$\frac{7 \text{ fragments}}{500 \text{ tons}} = \frac{100 \text{ fragments}}{x}$$

$$\frac{7x}{7} = \frac{50,000}{7}$$

$$x = 7142.857143$$

7143 tons of gravel

3. A cookie recipe calls for 3 eggs and makes 4 dozen cookies.

a) How many dozen cookies could you make with a dozen eggs?

$$\frac{3 \text{ eggs}}{4 \text{ dozen cookies}} = \frac{12 \text{ eggs}}{x}$$

$$\frac{3x}{3} = \frac{48}{3}$$

$$x = 16 \text{ dozen cookies}$$

b) How many eggs would you need to make 18 dozen cookies?

$$\frac{3 \text{ eggs}}{4 \text{ dozen cookies}} = \frac{x}{18 \text{ dozen}}$$

$$\frac{4x}{4} = \frac{54}{4}$$

$$x = 13.5 \text{ or } 14 \text{ eggs}$$

4. A map of Connecticut is drawn to a scale where 2 inches on the map represents 35 miles.

a) If Greenwich and Stonington are 105 miles from each other, how far apart do they appear on the map?

$$\frac{2 \text{ in}}{35 \text{ miles}} = \frac{x}{105 \text{ miles}}$$

$$\frac{35x}{35} = \frac{210}{35}$$

$$x = 6 \text{ in}$$

b) On this same map, the road from Mystic to Hartford is 1.5 inches long. How far apart are Mystic and Hartford?

$$\frac{2 \text{ in}}{35 \text{ miles}} = \frac{1.5 \text{ in}}{x}$$

$$\frac{2x}{2} = \frac{52.5}{2}$$

$$x = 26.25 \text{ miles}$$

5. A bag of 8 apples costs \$1.50 at Sam's Orchard.

a) At this same rate, how much would 18 apples cost?

$$\frac{8 \text{ apples}}{\$1.50} = \frac{18 \text{ apples}}{x}$$

$$\frac{8x}{8} = \frac{27}{8}$$

$$x = 3.375$$

$$\rightarrow \boxed{\$3.38}$$

b) How many apples could you buy for \$5.00?

$$\frac{8 \text{ apples}}{\$1.50} = \frac{x}{\$5.00}$$

$$\frac{1.50x}{1.50} = \frac{40}{1.50}$$

$$x = 26.6$$

$$\downarrow$$

$$\boxed{26 \text{ apples}}$$

c) What is the unit cost per apple?

$$\frac{8 \text{ apples}}{\$1.50} = \frac{1 \text{ apple}}{x}$$

$$\frac{\$1.50}{8} = .1875$$

$$\boxed{\$0.19/\text{apple}}$$

6. Will's Widget Works can produce two and a half tons of widgets in an 8 hour work day.

a) How many widgets can Will's Widget Works produce between 9 am and noon?

$$\frac{2.5 \text{ tons}}{8 \text{ hr}} = \frac{x}{3 \text{ hr}}$$

$$\frac{8x}{8} = \frac{7.5}{8}$$

$$\boxed{x = .9375 \text{ ton}}$$

b) McGee Manufacturing, Inc. needs to order 17 tons of widgets. How many work days will it take Will's Widget Works to fill this order?

$$\frac{2.5 \text{ tons}}{8 \text{ hr}} = \frac{17 \text{ tons}}{x}$$

$$\frac{2.5x}{2.5} = \frac{136}{2.5}$$

$$x = 54.4 \text{ hr}$$

$$\frac{54.4 \text{ hr}}{8 \text{ hr}} = 6.8$$

$$\downarrow$$

$$\boxed{7 \text{ work days}}$$

7. The ratio of boys to girls in Mrs. Smith's classes is 5:7. If there are 60 students in all of her classes, how many are boys?

$$\frac{5 \text{ boys}}{12 \text{ total}} = \frac{x}{60 \text{ total}}$$

$$\frac{12x}{12} = \frac{300}{300}$$

$$x = 25 \text{ boys}$$

8. a) $\frac{6}{3b+2} = \frac{3}{5}$

b) $\frac{e-2}{2} = \frac{e+2}{3}$

c) $\frac{4-f}{5} = \frac{f+1}{3}$

d) $\frac{5k-2}{-4} = \frac{2-5k}{4}$