

Solve the proportion.

$$\frac{41}{1} \cdot \frac{2}{2} = \frac{6}{24} \cdot \frac{24}{1}$$

$$\frac{24 \cdot 2}{24} = \frac{12}{24}$$

$$y = \frac{1}{2}$$

$$\frac{41}{1} \cdot \frac{3}{3} = \frac{36}{4} \cdot \frac{4}{1}$$

$$\frac{12}{36} = \frac{36n}{36}$$

$$n = \frac{1}{3}$$

$$3 \cdot \frac{W}{1} \cdot \frac{4}{4} = \frac{80}{4} \cdot \frac{5}{1} \cdot \frac{1}{1}$$

$$\frac{80W}{80} = \frac{20}{80}$$

$$W = \frac{1}{4}$$

$$4. \frac{3}{1} \cdot \frac{18}{x-2} = \frac{4}{2} \cdot \frac{3}{1} \cdot \frac{x-2}{1}$$

$$54 = 4x - 8$$

$$+8 \quad +8$$

$$\frac{62}{4} = \frac{4x}{4}$$

$$x = \frac{31}{2}$$

$$5. \frac{x}{1} \cdot \frac{x-4}{x-4} = \frac{5}{1} \cdot \frac{x}{1} \cdot \frac{x-4}{1}$$

$$3x = 5x - 20$$

$$-3x \quad -3x$$

$$0 = 2x - 20$$

$$+20 \quad +20$$

$$\frac{20}{2} = \frac{2x}{2}$$

$$x = 10$$

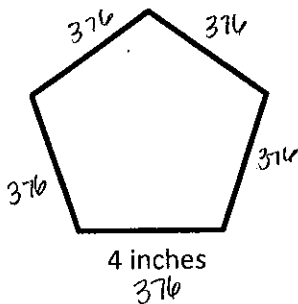
6. In 2 hours a candymaker can produce 80 boxes that contain 10 pieces of candy. How many pieces of candy does the candymaker produce in 6 hours?

$$\frac{x}{1} \cdot \frac{80}{800} = \frac{2}{x} \cdot \frac{1}{1} \cdot \frac{800}{1}$$

$$\frac{2x}{2} = \frac{4800}{2}$$

$$x = 2400 \text{ pieces of candy}$$

7. The figure below represents a building in the shape of an equilateral pentagon. Using the scale 1 inch = 94 feet, what is the perimeter of the building?



$$\frac{x}{1} \cdot \frac{94}{94} = \frac{4}{x} \cdot \frac{1}{1} \cdot \frac{94}{1}$$

$$x = 376$$

$$P = 1880 \text{ ft}$$

8. A photocopier is used to make a similar, reduced copy of a document. The original document is 24 cm wide and 33 cm tall. The copy is 15 cm wide. What is the height of the copy to, to the nearest tenth of a cm?

$$\frac{x}{1} \cdot \frac{33}{33} = \frac{15}{24} \cdot \frac{1}{1} \cdot \frac{33}{1}$$

$$\frac{24x}{24} = \frac{495}{24}$$

$$x = 20.6 \text{ cm tall}$$

9. Your digital camera printer printed 5 pictures in 7.5 minutes. At this rate, how long will it take you to print 18 pictures?

$$\frac{x}{1} \cdot \frac{7.5}{1} = \frac{18}{x} \cdot \frac{7.5}{1}$$

$$5x = \frac{135}{5}$$

$$x = 27 \text{ minutes}$$

10. You are stenciling letters on posters for an upcoming school dance. It takes you about 4 minutes to stencil 3 letters. At this rate, how long will it take you to stencil "Homecoming Dance" on 10 posters?

$$\frac{15}{1} \cdot \frac{4}{3} = \frac{x}{15} \cdot \frac{3}{1}$$

$$\frac{60}{3} = \frac{3x}{3}$$

$$x = 20 \text{ minutes}$$

200 min or 3.3 hours

11. A map has a scale of 1 cm : 15 km. Use the given map distances to find the actual distance.

A. 4 cm.

$$\frac{x}{1} \cdot \frac{1}{15} = \frac{4}{x} \cdot \frac{1}{15}$$

$$x = 60 \text{ km}$$

B. 2.5 cm.

$$\frac{x}{1} \cdot \frac{1}{15} = \frac{2.5}{x} \cdot \frac{1}{15}$$

$$x = 37.5 \text{ km}$$

C. 7 cm.

$$\frac{x}{1} \cdot \frac{1}{15} = \frac{7}{x} \cdot \frac{1}{15}$$

$$x = 105 \text{ km}$$

12. You created a model of the Grand Coulee Dam, located in the state of Washington, using a scale of 1 cm : 20 m. Your model is 15 cm tall. Estimate the actual height of the Grand Coulee Dam.

$$\frac{x}{1} \cdot \frac{1}{20} = \frac{15}{x} \cdot \frac{1}{20}$$

$$x = 300 \text{ m tall}$$

13. A bag of large breed dog food recommends feeding a dog 3 cups of food a day for every 40 pounds of body weight. A dog weighs 98 pounds. How much food should the dog be eating each day?

$$\frac{98}{1} \cdot \frac{3}{40} = \frac{x}{98} \cdot \frac{40}{1}$$

$$\frac{294}{40} = \frac{40x}{40}$$

$$x = 7.4 \text{ cups}$$

14. A car travels 135 miles on 4 gallons of gasoline. How many gallons of gasoline will be used to travel 540 miles?

$$\frac{x}{1} \cdot \frac{4}{1} = \frac{540}{x} \cdot \frac{1}{1}$$

$$\frac{135x}{135} = \frac{2160}{135}$$

$$x = 16 \text{ gallons}$$