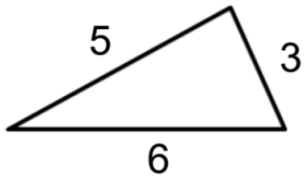
PRACTICE

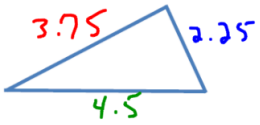
Label the sides of the similar figures with the give scale factor.

1.

Original Triangle



Scale Factor $= \frac{3}{4}$

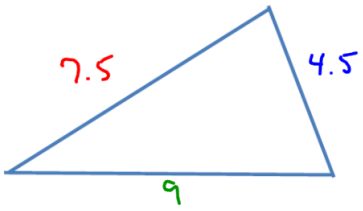


$5\left(\frac{3}{4}\right) = \frac{15}{4} = 3.75$

$3\left(\frac{3}{4}\right) = \frac{9}{4} = 2.25$

$6\left(\frac{3}{4}\right) = \frac{18}{4} = 4.5$

Scale Factor $= \frac{3}{2}$



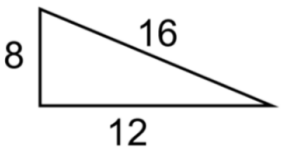
$5\left(\frac{3}{2}\right) = \frac{15}{2} = 7.5$

$3\left(\frac{3}{2}\right) = \frac{9}{2} = 4.5$

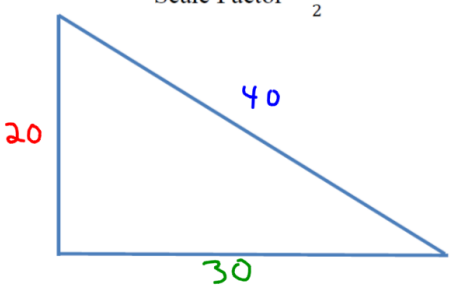
$6\left(\frac{3}{2}\right) = \frac{18}{2} = 9$

2.

Original Triangle



Scale Factor $= \frac{5}{2}$

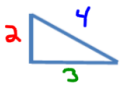


$8\left(\frac{5}{2}\right) = \frac{40}{2} = 20$

$16\left(\frac{5}{2}\right) = \frac{80}{2} = 40$

$12\left(\frac{5}{2}\right) = \frac{60}{2} = 30$

Scale Factor $= \frac{1}{4}$



$8\left(\frac{1}{4}\right) = 2$

$16\left(\frac{1}{4}\right) = 4$

$12\left(\frac{1}{4}\right) = 3$

Use proportions to solve the following.

3. Hot Wheels are designed to be 1:64 of the real automobile. Mr. Brust wants to make a Hot Wheel made of his Toyota Sienna Minivan. If the width of Mr. Brust's minivan is 200 centimeters. How long would his minivan Hot Wheel be?

model → $\frac{1}{64} = \frac{x}{200}$

real →

$\frac{64x}{64} = \frac{200}{64}$

$x = 3.125$ cm

4. An architect makes a model of house with a pool. 1.5 cm of the model is equal to 3 meters in real life. If the model pool is 3.2 cm long, how long is the real pool?

model → $\frac{1.5}{3} = \frac{3.2}{x}$

real →

$\frac{1.5x}{1.5} = \frac{9.6}{1.5}$

$x = 6.4$ meters

5. Mr. Brust wants to drive from Dayton to Cincinnati. The map has a scale of 2 cm = 15 miles. If Mr. Brust measure the distance between the two cities as 7 cm. How far apart are the cities?

map → $\frac{2}{15} = \frac{7}{x}$

real →

$\frac{2x}{2} = \frac{105}{2}$

$x = 52.5$ miles

6. The scale of a map is ½ inch equals 28 miles. If two cities are 460 miles away in real life, how far apart will they be drawn on the map? To .s

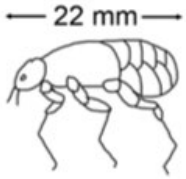
map → $\frac{0.5}{28} = \frac{x}{460}$

real →

$\frac{28x}{28} = \frac{230}{28}$

$x = 8.21$ inches

7. Mr. Brust drew the picture of a flea below. The ratio of drawing to real flea is 80:1. How long is a real flea?



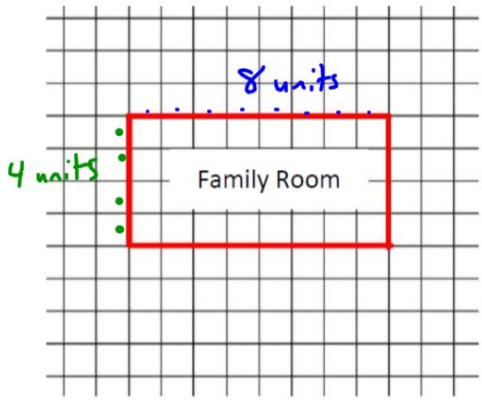
drawing → $\frac{80}{1} = \frac{22}{x}$

real →

$\frac{80x}{80} = \frac{22}{80}$

$x = 0.275$ mm

8. The scale is 2 units = 9 feet. What are the real-life dimensions of the family room?



drawing → $\frac{2}{9} = \frac{8}{x}$

real →

$2x = 72$

$x = 36$

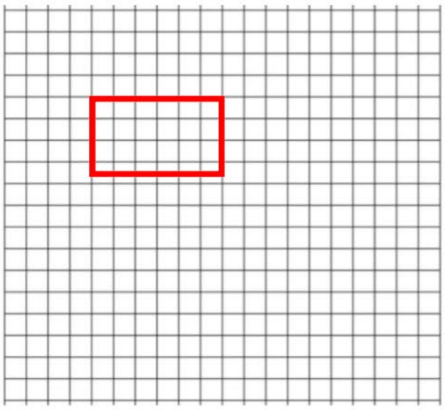
$\frac{2}{9} = \frac{4}{y}$

$2y = 36$

$y = 18$

36' x 18'

9. The scale is 1 unit = 7 feet. Draw a scaled version of a 42 foot by 24.5 foot rectangular kitchen.



$\frac{1}{7} = \frac{x}{42}$ $\quad$ $\frac{1}{7} = \frac{y}{24.5}$

$7x = 42$ $\quad$ $7y = 24.5$

$x = 6$ units $\quad$ $y = 3.5$ units

6×3.5

10. Amazon is selling a model of the F/A-18 Hornet series fighter aircraft. The description is shown next to the model.

Model Description:

Skill Level: 2

Scale: 1/48

Length: 15"

Wingspan: 11"

Parts: 110+

a. What is the length of a real Hornet fighter aircraft? SHOW WORK!

model → $\frac{1}{48} = \frac{15}{x}$

real →

$x = 720$ inches

b. What is the wingspan of a real Hornet fighter aircraft? SHOW WORK!

model → $\frac{1}{48} = \frac{11}{x}$

real →

$x = 528$ inches