Solve.

$$\frac{5x}{8} = \frac{7}{2} = \frac{13}{4y}$$

$\frac{5x}{8} = \frac{7}{2} = \frac{13}{4y}$

To solve for x use the first two ratios:

(5x)(2) = (7)(8)
10x = 56
10 10

x = 5.6

$\frac{5x}{8} = \frac{7}{2} = \frac{13}{4y}$

To solve for y use the last two ratios:

(7)(4y) = (13)(2)
28x = 26
28 28

x = 26/28 = 13/14 ≈ 0.93

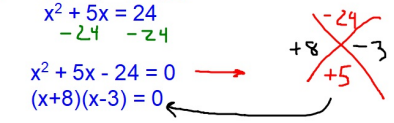
Solve.

$$\frac{x+5}{6} = \frac{4}{x}$$

Cross products: x(x+5) = (4)(6)

$x^2 + 5x = 24$
−24 −24

$x^2 + 5x - 24 = 0$
$(x+8)(x-3) = 0$



x = -8, 3

After each statement tell which of the figure(s) it is a characteristic of:
||-gram(P), Rhombus(Rh), Rectangle(Rec), Square(Sq), Kite (K)
Trapezoid (T), Isosceles Trapezoid. (I T

1. All sides are congruent. Rh, Sq
2. Opposite Sides are ≅. P, Rh, Rec, Sq
3. Opposite sides are parallel. P, Rh, Rec, Sq
4. Opposite Angles are ≅. P, Rh, Rec, Sq
5. All angles are Rt. angles. Sq, Rec
6. Consec angles are suppl P, Rh, Rec, Sq
7. Diagonlas bisect each other. P, Rh, Rec, Sq
8. Diagonals are perpendicular. K, Rh, Sq
9. Diagonals are ≅. Rec, Sq, I T

Chapter 7: Similarity

Similar figures: Two figures that have the same shape but not neccessarily the same size.

Symbol for Similar: ~

Scale Drawing:
A drawing of an actual object that is similar
but either larger than the actual object (enlargement)
or smaller than the actual object (reduction)

Scale: the scale on a drawing is a ratio

$$\text{Scale} = \frac{\text{Measure on drawing}}{\text{Corresponding actual measure}}$$

The scale on a drawing of an insect is 18:5.

1. The insect is actually 2.2 cm long.
How long is the insect in the drawing?

$$\frac{18 \text{ drawing size}}{5 \text{ actual size}} = \frac{x}{2.2 \text{ cm}}$$

Cross multiply to get: x = 7.92 cm

The scale on a drawing of an insect is 18:5.

2. In the drawing the wingspan of the insect is 6cm.
What is the actual wingspan?

$$\frac{18 \text{ drawing size}}{5 \text{ actual size}} = \frac{6 \text{ cm}}{x}$$

Cross multiply to get: x = 1.67 cm

The scale on a drawing of an airplane is 6:95

1. Plane is actually 24 feet long. How long
is it in the drawing, in inches?

24 feet $\left(12 \frac{\text{in}}{\text{ft}}\right)$ = 288 in

$$\frac{6 \text{ drawing size}}{95 \text{ actual size}} = \frac{x}{288 \text{ in}}$$

Cross multiply to get: x = 18.19 in

The scale on a drawing of an airplane is 6:95

2. The airplane in the drawing is 8 inches tall. How tall is the actual plane, in feet?

$$\frac{\text{6 drawing size}}{\text{95 actual size}} = \frac{8\text{in}}{x}$$

Cross multiply to get: x = 126.67 in
=(126.67in)(1ft/12in)
=10.56 ft.

You want to make a scale drawing of the floorplan of a house.

The house is actually 32ft x 40ft

You have a piece of paper that is 9" x 12"
What scale would you use to make the largest scale drawing of the house possible?

$\frac{32\text{ft}}{9} \rightarrow \frac{9\text{in}}{9}$

1in = 3.56 ft

If this scale is used, 40 feet would require 11.24 inches which would fit because it is less than 12 inches.

$\frac{40\text{ ft}}{12} \rightarrow \frac{12\text{ in}}{12}$

1in = 3.33 ft

If this scale is used, 32 feet would require 9.61 inches which would NOT fit because it is more than 9 inches.

The best scale to use so that the drawing fills up as much of the paper as possible is: 1 in = 3.56ft

Hwk #10 Sec 7-1

Page 368 Due Wednesday

Problems 1-5, 7, 9, 15, 18, 25, 44, 46