Using Similar Figures:

Scale Drawings:
Drawing of an actual object that is either larger (enlargement) or smaller (reduction) than the actual object but similar to it.

$$\text{Scale of a drawing} = \frac{\text{drawing measure}}{\text{actual measure}}$$

Does each scale represent an enlargement or a reduction?

1. 5:6 Reduction
2. 45:2 Enlargement
3. 2:1 Enlargement twice as big
4. 1:3 Reduction one-third the size
5. 1:1 → congruent figures

1. On a scale drawing of a house (blueprint) the living room is 8 inches long. The actual living room is 20 feet long. What is the scale of the blueprint?

$\frac{8\text{ in}}{20\text{ ft}} = \frac{2\text{ in}}{5\text{ ft}} = \frac{2\text{ in}}{60\text{ in}} = 1:30$

2. On a scale drawing of a butterfly it's wingspan is 10 cm. The actual wingspan of the butterfly is 4 cm. What is the scale of the drawing?

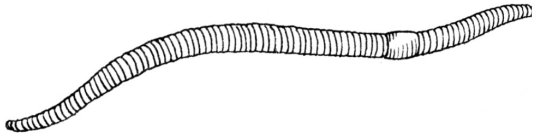
$\frac{10\text{ cm}}{4\text{ cm}} = \frac{5}{2} = 5:2$

3. The scale on a model of a fighter jet is 3:220

If the length of the model is 10.5 inches find the length of the actual jet.

$\frac{3}{220} = \frac{10.5\text{ in}}{x\text{ in}}$

770 in



4. A drawing of a worm in a science book has the following scale 12:5. If the real worm is 2.3 inches long, find the length of the worm in the drawing.

$\frac{12}{5} = \frac{X \text{ in}}{2.3 \text{ in}}$ $X = 5.52$ in

5. The scale on a map is 3 in = 40 mi

The area of Oakland County is about 908 mi^2
If the dimensions of the county are actually 32.4 miles by 28 miles find the dimensions in the drawing. Round to the nearest tenth.

$\frac{3 \text{ in}}{40 \text{ mi}} = \frac{X \text{ in}}{32.4 \text{ mi}}$

32.4 mi

2.43 in

28 mi

2.1 in

$\frac{3 \text{ in}}{40 \text{ mi}} = \frac{X \text{ in}}{28 \text{ mi}}$

on the map dimensions are

2.43 in x 2.1 in

You can now finish Hwk #24.

Due Monday

A sale at the appliance store is advertised in the paper. You cut out the 20% off coupon and took it to the store to buy a new refrigerator. The price tag on the refrigerator lists it for $750. What will the new price be after you use the coupon?

$(750)(.20) = 150$

final price
$750 - 150$
$600

When 6% Michigan sales tax is added how much did you actually pay for the refrigerator?

$(.06)(600) = 36$ tax

final cost
$600 + 36 = 636$

Sec 4-3: Proportions and Percent Equations

1. What is 40% of 936?

$X = 374.4$

$\frac{\text{Part}}{\text{Tot}} \quad \frac{40}{100} = \frac{X}{936} = \frac{\text{Part}}{\text{Tot}}$

2. 80 is 15% of what?

$\frac{15}{100} = \frac{80}{X} \qquad X = 533.33$

3. 90 is what percent of 550?

16.36%

$\frac{X}{100} = \frac{90}{550}$