

\* Use power pt. to fill in.

### Scale Drawings

\* What is scale factor? Scale factor is the ratio between two sets of measurements.

\* In a scale drawing, the scale factor is the ratio of the measurement on the drawing to the measurement of the actual object.

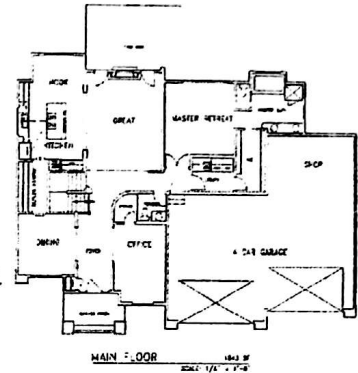
\* The scale on the blueprint says that  $\frac{1}{4}'' = 1'$ . What does that mean?

For every  $\frac{1}{4}''$  on the drawing, it is 1 foot in the actual house.

\* Scale drawings are proportional to the objects they represent.

\* What are some common examples or uses of scale drawings?

car makers, architects, maps



\* **Example:** Finding Actual Distances: The scale on a map is 4 in = 1 mi. On the map, the distance between two towns is 20 inches. What is the actual distance? Show all work below.

Work to solve the problem:

$$\frac{4 \text{ in}}{1 \text{ mi}} = \frac{20 \text{ in}}{x}$$

$$4 \cdot x = 20 \cdot 1$$

$$\frac{4x}{4} = \frac{20}{4}$$

$$x = 5$$

Explanation:

- use cross products to solve
- $x = 5$
- The actual distance is 5 miles.

### Lesson Review: Try These! ©

On a map of the Great Lakes area, 2 cm = 45 km. For problem #s 1-4, copy down their distances on the map. Then, determine their actual distances. Show work on the left page of your MSG.

1. Detroit to Cleveland is 12 cm on the map, and ? km in real life.
2. Duluth to Nipigon is 20 cm on the map, and \_\_\_\_\_ km in real life.
3. Buffalo to Syracuse is 10 cm on the map, and \_\_\_\_\_ km in real life.
4. Sault Ste. Marie to Toronto is 33 cm on the map, and \_\_\_\_\_ km in real life.
5. Distance from Detroit to State Park is 450 km in real life, and \_\_\_\_\_ cm on the map.



$$\frac{2 \text{ cm}}{45 \text{ km}} = \frac{12 \text{ cm}}{x \text{ km}}$$

$$540 = 2x$$

$$270 = x$$