

Name: \_\_\_\_\_

HW#: 20

1. If the ratio of a scale drawings dimensions to the original drawings dimensions is 1:5, is this an enlargement or a reduction? How do you know?

$\frac{1}{5}$  Reduction (because less than 1)

2. If the ratio of a scale drawing dimensions to the original drawings dimensions is 5:1, is this an enlargement or a reduction?

$\frac{5}{1}$  Enlargement (because greater than 1)

3. Write the scale factor for each example:

- a. 2 ft model of a 3 yd. table

$$\frac{2 \text{ ft}}{3 \text{ yd}} \times 3 \quad \frac{2 \text{ ft}}{9 \text{ ft}} \quad \boxed{\frac{2}{9}}$$

- b. 6 in. model of a 6ft sofa

$$\frac{6 \text{ in}}{6 \text{ ft}} \times 12 \quad \frac{6 \text{ in}}{72 \text{ in}} \quad \boxed{\frac{1}{12}}$$

- b. 40 cm model of a 5m tree

$$\frac{40 \text{ cm}}{5 \text{ m}} \times 100 \quad \frac{40 \text{ cm}}{500 \text{ cm}} \quad \boxed{\frac{2}{25}}$$

- d. 8 cm model of a 24m. rocket

$$\frac{8 \text{ cm}}{24 \text{ m}} \times 100 \quad \frac{8 \text{ cm}}{2400 \text{ cm}} \quad \boxed{\frac{1}{300}}$$

4. Walter has an 18in. model of a 42ft. Tyrannosaurus Rex. What scale factor does this represent?

$$\frac{18 \text{ in}}{42 \text{ ft}} \times 12 \quad \frac{18 \text{ in}}{504 \text{ in}} \quad \boxed{\frac{1}{28}}$$

5. A student is asked to find the scale factor that relates a 10 in. scale model to a 45 ft. building. She solves the problem by writing the following:

$$\frac{10 \text{ in}}{45 \text{ ft}} = \frac{2}{9}$$

What error did the student make? What is the correct scale factor?

The student reduced before making units match.

$$\frac{10 \text{ in}}{45 \text{ ft}} \times 12 \quad \frac{10 \text{ in}}{540 \text{ in}} \quad \boxed{\frac{1}{54}}$$