Name:	Key

Period: \_\_\_\_\_ Date: \_\_\_\_\_

Math 7

Chapter 11

- Answer each question and explain how you calculated your answers.
  - a. If the wingspan of the model is 13.75 inches long, how long is the wingspan of the actual plane? Show your proportion and work.

work. model =  $\frac{1}{144} = \frac{13.75 \text{ in}}{1980 \text{ in}}$  4.  $\frac{13.757}{1980 \text{ in}} = \frac{1}{1205} \text{ feet} = \frac{1980 \text{ in}}{1980 \text{ in}}$ 

**b.** If the DC-10 is 58 feet high, how high is the model? Show your proportion and work.

 $\frac{m}{a} = \frac{x}{144} = \frac{x}{58 \text{ feet}} = \frac{x}{144}$ 0.403 feet = 4.83 in.

2. The Haitian flag has a width: length ratio of 3:5. If a Haitian flag is 180 centimeters long, what is its width in meters? Show your proportion and work.

$$\frac{W}{l} = \frac{3}{5} = \frac{w}{180 \text{ cm}}$$

$$\frac{\sqrt{307}}{108 \text{ cm}} = 1.08 \text{ m}$$

Pre-Test

3. The scale factor for a toy animal is 1:30. What does this mean?

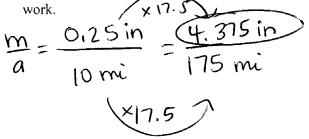
The toy is \$\frac{1}{30}\$ the purge of the actual arrival is 30 times the purge of the toy, preportionately

4. Darius designed a billboard. The billboard is 480 inches long by 144 inches high. Darius used a computer to design the billboard. Determine the following possible sizes for his computer design that maintain exactly the same shape. Show your proportions and work.

a. 12 inches × \_\_\_\_\_ inches :40 (480 in x 144 in.) :40

b. 8 inches 2.4 inches 7:40

c. \_\_\_ 2 feet × \_\_\_ O\_1 lo\_ feet 480 in × 144 in -20 -10 40 feet × 12 feet 5. J.P. lives 175 miles from his grandmother's house. His map shows that  $\frac{1}{4}$  inch is equivalent to 10 miles. How many inches apart are J.P.'s house and his grandmother's house on his map? Hint: Convert the fraction to a decimal. Show your proportion and work.



6. A blueprint has a scale of  $\frac{1}{4}$  inch is equivalent to 1 foot. The blueprint shows the design of a room that is  $4\frac{1}{2}$  inches long and  $3\frac{1}{4}$  inches wide. What are the actual dimensions of the room?

Show your proportion(s) and work.

$$\frac{m}{a} = \left(\frac{0.25 \text{ in}}{1 \text{ foot}} = \frac{4.5 \text{ in.}}{1}\right)_{70.25}$$
18 feet long

$$\frac{m}{a} = \frac{0.25 \text{ in}}{1 \text{ boot}} = \frac{3.25 \text{ in}}{w} = \frac{3.25 \text{ in}}{13 \text{ feet wide}}$$

- 7. Sara is working with a microscope that magnifies objects to 170 times their actual size.
  - a. What is the scale factor for the microscope?

b. The diameter of a Staphylococcus bacterium is 0.001 millimeter. How big in will the cell appear to Sara under the microscope? Show your proportion and

$$\frac{m}{q} = \frac{170}{1} = \frac{0.17 \text{ mm}}{0.001 \text{ mm}}$$

c. The diameter of an orchid seed under Sara's microscope appears to be 8.5 millimeters. What is the diameter of the actual orchid seed? Show your proportion and work.

$$\frac{m}{a} = \frac{170}{1} = \frac{8.5 \, \text{mm}}{a} = \frac{170}{170}$$