Name:_____   Date:_____

Math 9: HW Section 7.1 and 7.2 Scaled Diagrams and Scaled Factors

1. Convert the following units:

|		
a) $8km = ?m$	b) $13km = ?cm$	c) $90m = ?cm$
d) $180m = ?mm$	e) $16.5cm = ?mm$	f) $19km = ?mm$
g) $5838mm = ?m$	h) $9292cm = ?km$	i) $39,494,112mm = ?km$

2. Find the scaled factors for the following:

|	
a) Real car (5m) & toy car (18cm)	b) Height of hotel (150m) toy hotel (4cm)
c) Real lady bug (1.2cm) Toy lady bug (80cm)	d) Size of city (45km) map of city (25cm)
e) Size of Planet (180,000km) Toy Planet (55cm)	f) Real Death star (200km) Death star Replica (1.8m)
g)Real Ant (9mm) Toy Ant (1.3m)	h) Real donut (9cm) Large Donut (18m)

3. Given each of the following equations, find the value of "x":

a) $\dfrac{3}{5} = \dfrac{x}{10}$	b) $\dfrac{2}{8} = \dfrac{x}{12}$	c) $\dfrac{7}{20} = \dfrac{x}{60}$	d) $\dfrac{12}{14} = \dfrac{x}{21}$
e) $\dfrac{4}{11} = \dfrac{2x}{33}$	f) $\dfrac{4}{15} = \dfrac{10}{x}$	g) $\dfrac{12}{x} = \dfrac{6}{10}$	h) $\dfrac{3}{5} = \dfrac{3x}{4}$

4. Given the following two shapes, use a ruler to determine the scale factor:

Original

Image

Original

Image



Original

324m

Model

15cm
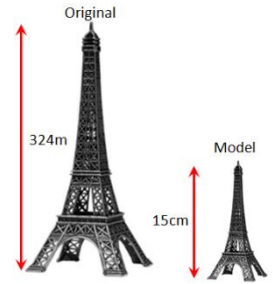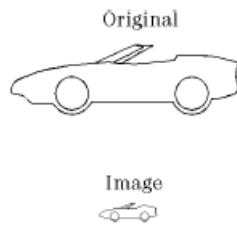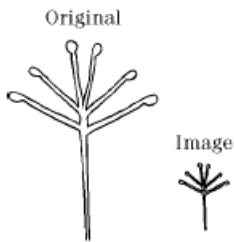
5. Given each of the following images on the left, draw a scaled diagram with a scaled factor of 2.5:
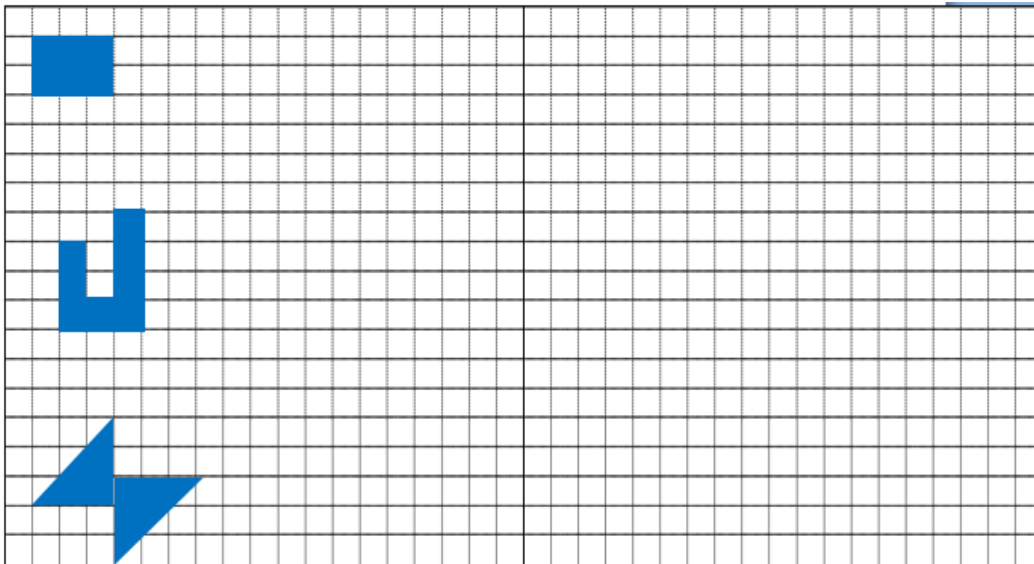
6. The average length of a BMW 325xi is about 4.85meters long. A toy model of this car is reduced at a scaled factor of 0.25. What is the length of the toy model?

7. What does a scale factor of 1 mean?

8. What does a scale factor of 10 mean?

9. What does a scale factor of 0.001 mean?

10. Why is there no units with scaled factors?

11. The distance between Vancouver and Seattle is 226.5km. The distance between the two cities on a map is about 2.3cm apart. What is the scaled factor of the map?

12. The length of an apple is 12cm. A Toy apple has a scaled factor of 2.5. What is the length of the toy apple?

13. A bacteria is 0.0032mm long. If a model of the bacteria is 250.12, then how big is the bacteria in cm?

14. The scaled factor of a map 1/200,000,000. If the distance between the two cities on a map is 5.5cm, how far are they apart in the real world?

15. The Tumbler from Batman Returns has a length of 4.6 meters long. A toy model of this vehicle is 25cm long. What is the scaled factor?
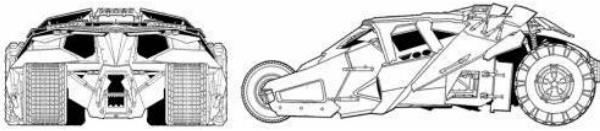
16. The length of an E. coli bacteria is about 0.005mm long. A toy E. coli bacteria has a length of 35cm long. What is the scaled factor of the toy?

17. An architect builds a model of a building at a scaled factor of 0.0003. If the model has a length of 85cm long and 75cm wide, what is the length and width of the actual building in meters? What is the area of the building?

18. A little photograph measuring 10cm by 15cm is enlarged by a scaled factor of 10.5. What is the area of the enlarged picture in cm^2?