

Geometry 2/2/17

- Check in Dilation Assignment
- Go over questions on Dilation Assignment.
- Complete Notes on Using Proportions to Solve Geometry Problems 6.2
- Tomorrow - Similar Polygons



Dilation Assignment Answers

1. D
2. C
3. B
4. A
5. Enlargement
6. Reduction
7. Enlargement
8. Reduction $k = 1/2$
9. Enlargement $k = 11/5$
10. Reduction $k = 3/5$
11. $k = 5/3$
12. $k = 2/5$
13. $k = 8/5$
14. Enlargement
15. $k = 13/8$

6.2 Use Proportions to solve Geometry problems

Goal: Use proportions to solve geometry problems.

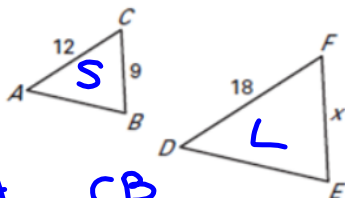
VOCABULARY

Scale drawing A scale drawing is a drawing that is the same shape as the object it represents.

Scale The scale is a ratio that describes how the dimensions in the drawing are related to the actual dimensions of the object.

Example 1: Use properties of proportions. The triangles are proportional. * Small: Large

1. Write three true proportions and find the value of x.



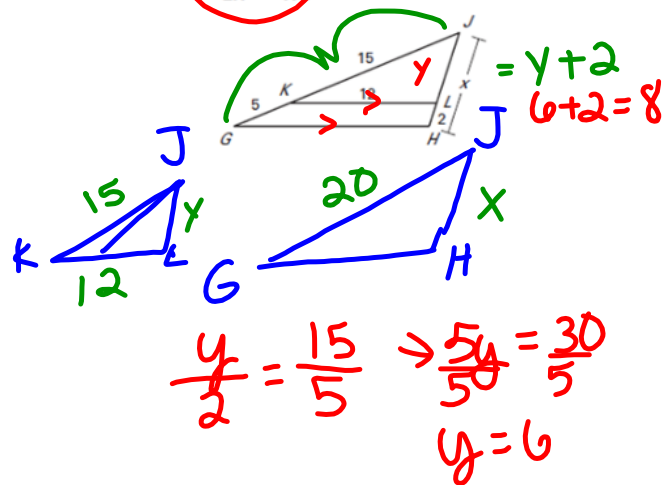
$$\frac{CA}{FD} = \frac{CB}{FE}$$

$$\frac{12}{18} = \frac{9}{x}$$

$$\frac{12x}{12} = \frac{162}{12}$$

$$x = 13.5$$

2. $\frac{JL}{LH} = \frac{JK}{KG}$ Find JH and JL.



$$\frac{y}{2} = \frac{15}{5} \Rightarrow \frac{5y}{5} = \frac{30}{5}$$

$$y = 6$$

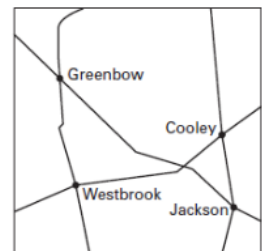
Example 2: Use a scale drawing

3. The scale of the map at the right is 1in:8mi. If the distance on the map from Cooley to Westbrook is 1.25 inches, find the actual distance between these two cities.

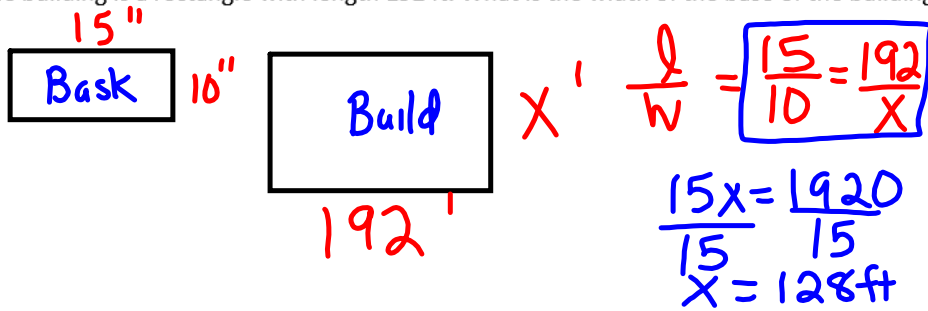
$$\frac{1 \text{ in}}{8 \text{ mi}} = \frac{1.25 \text{ in}}{x \text{ mi}}$$

$$1x = 10 \text{ mi}$$

$$x = 10 \text{ mi}$$



4. **Architecture:** A basket manufacturer has headquarters in an office building that has the same shape as a basket they sell. The bottom of the basket is a rectangle with length 15 inches and width 10 inches. The base of the building is a rectangle with length 192 ft. What is the width of the base of the building?

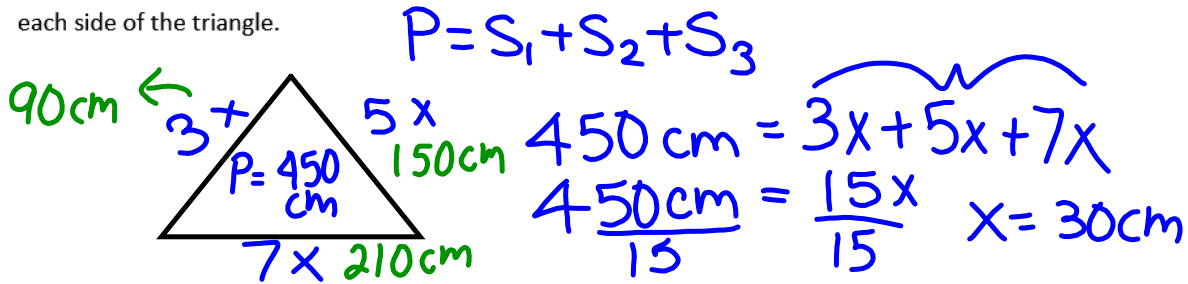


5. How many times bigger is the actual building than the scale model?

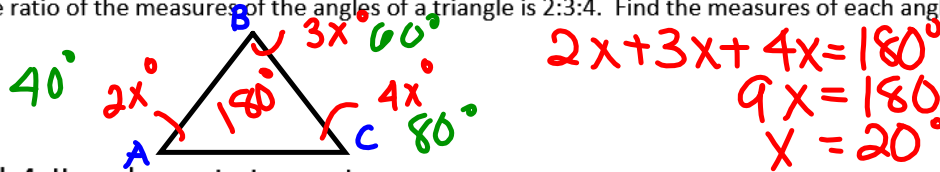
$$\frac{\text{Building}}{\text{Basket}} = \frac{128 \text{ ft}}{10 \text{ in}} = \frac{128(12)}{10} = \frac{1536 \text{ in}}{10 \text{ in}} = 153.6 \text{ times bigger}$$

Example 3: Use properties of triangles.

6. The ratio of the measures of the sides of a triangle is 3:5:7 and its perimeter is 450 cm. Find the length of each side of the triangle.



7. The ratio of the measures of the angles of a triangle is 2:3:4. Find the measures of each angle.



Example 4: Use exchange rates to convert currency.

8. On Jan 20, 2017, the exchange rate of Euros to American Dollars is 1 to 1.07. If you have \$500 USD for spending money for a trip and want to exchange it, how many Euros will you have?

$$\frac{E}{D} \frac{1}{1.07} = \frac{X}{500} \quad \frac{1.07X}{1.07} = \frac{500}{1.07} \quad X = 467.29 \text{ Euros}$$

Homework: Worksheet 6.2

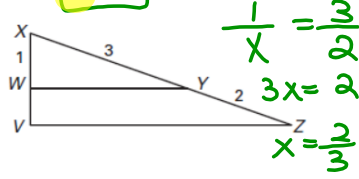
Geometry Worksheet 6.2

Name _____

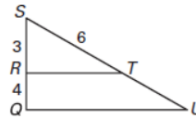
Date _____ P _____

Use the diagram and the given information to find the unknown length.

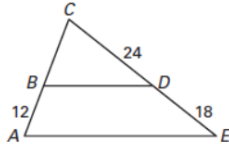
1. Given $\frac{XW}{WV} = \frac{XY}{YZ}$, find WV .



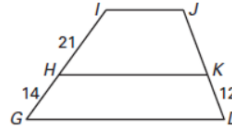
2. Given $\frac{SR}{RQ} = \frac{ST}{TU}$, find TU .



3. Given $\frac{BC}{AB} = \frac{CD}{DE}$, find BC .

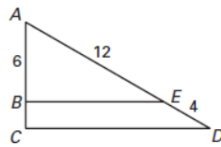


4. Given $\frac{HI}{GH} = \frac{JK}{KD}$, find JD .

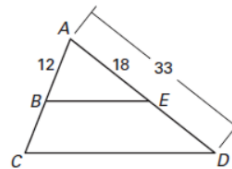


Use the diagram and the given information to find the unknown length.

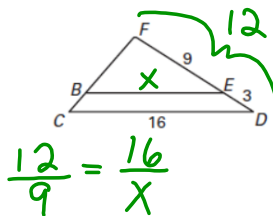
5. Given $\frac{AB}{BC} = \frac{AE}{ED}$, find BC .



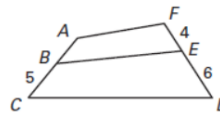
6. Given $\frac{AB}{BC} = \frac{AE}{ED}$, find BC .



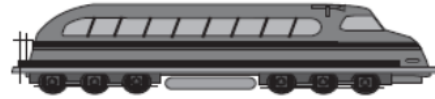
7. Given $\frac{FD}{FE} = \frac{CD}{BE}$, find BE .



8. Given $\frac{AB}{BC} = \frac{FE}{ED}$, find AC .



Scale Model You purchase a scale model of a train.
The model states that the scale is 1 inch : 5.4 feet.



9. If the model is 10 inches long, how long is the actual train?
10. The actual height of the train is 13.5 feet, how tall is the model?

Mexican Pesos In November, 2005, the exchange rate of Mexican pesos to U.S. dollars was 10.77 to 1. While on vacation, you paid 205 pesos for a sombrero at a gift shop.

11. What was the price of the sombrero in U.S. dollars?
12. If the exchange rate were 9.24 Mexican pesos to 1 U.S. dollar, what would have been the cost in U.S. dollars?

Canadian Dollars In November, 2005, the exchange rate of Canadian dollars to U.S. dollars was 1 to 0.85. A Canadian citizen paid \$12.28 in U.S. dollars for lunch while visiting New York City.

13. What was the price of the lunch in Canadian dollars?
14. If the exchange rate were 1.28 Canadian dollars to 1 U.S. dollar, what would have the cost been in Canadian dollars?
15. The ratio of the measures of the sides of a triangle is 3:5:7, and its perimeter is 450 centimeters. Find the measures of each side of the triangle.
16. The ratio of the measures of the sides of a triangle is 4:6:8, and its perimeter is 126 feet. What are the measures of the sides of the triangle?