

Similar Triangles: Applications

1. A tree 24 feet tall casts a shadow 12 feet long. Brad is 6 feet tall. How long is Brad's shadow? (draw a diagram and solve)

2. Triangles EFG and QRS are similar. The length of the sides of EFG are 144, 128, and 112. The length of the smallest side of QRS is 280, what is the length of the longest side of QRS?

3. A 40-foot flagpole casts a 25-foot shadow. Find the shadow cast by a nearby building 200 feet tall.

4. A girl 160 cm tall, stands 360 cm from a lamp post at night. Her shadow from the light is 90 cm long. How high is the lamp post?

5. A tower casts a shadow 7 m long. A vertical stick casts a shadow 0.6 m long. If the stick is 1.2 m high, how high is the tower?

6. Triangles IJK and TUV are similar. The length of the sides of IJK are 40, 50, and 24. The length of the longest side of TUV is 275, what is the perimeter of TUV? (draw a diagram and solve)

Name: _____

Geometry

7. A tree with a height of 4m casts a shadow 15 m long on the ground. How high is another tree that casts a shadow which is 20 m long? (draw a diagram and solve)
8. Triangles CDE and NOP are similar. The perimeter of smaller triangle CDE is 133. The lengths of two corresponding sides on the triangles are 53 and 212. What is the perimeter of NOP?
9. Luisa began walking up a hill at a spot where the elevation is 0.9 km. After she walked 3 km, she saw a sign giving the elevation as 0.95 km. How far will she have walked when she reaches an elevation of 1.1 km? Draw a diagram.
10. The foot of a ladder is 1.2 m from a fence that is 1.8 m high. The ladder touches the fence and rests against a building that is 1.8 m behind the fence. Draw a diagram, and determine the height on the building reached by the top of the ladder.
11. A rectangular soccer field is 120 yards long by 64 yards wide. What dimensions would a scale drawing of the soccer field be if the field were drawn using the scale $\frac{1}{4}$ inch = 10 feet?
12. In the diagram shown, a metal support brace is added to stabilize a metal triangle. The brace is parallel to the 18-foot base of the triangle and divides the left side into a 4-foot and a 6-foot section. What is the length of the metal support brace?

