

* For each question you must include a fully labelled diagram and show your work for your solution.

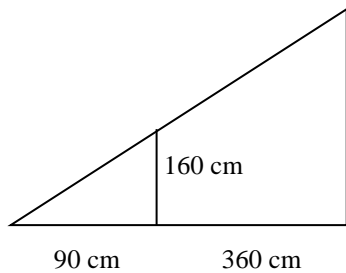
Steps to solving word problems:

- Draw a diagram and label everything that is known.
 - Find the corresponding sides and the ratio.
 - Solve for the missing sides.
 - Write a conclusion.
- A tree 24 feet tall casts a shadow 12 feet long. Brad is 6 feet tall. How long is Brad's shadow?
 - A tower casts a shadow 7 m long. A vertical stick casts a shadow 0.5 m long. If the stick is 1.2 m high, how high is the tower?
 - A 40-foot flagpole casts a 25-foot shadow. Find the shadow cast by a nearby building 200 feet tall.
 - 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 250, what is the perimeter of TUV?
 - 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 18 m long?

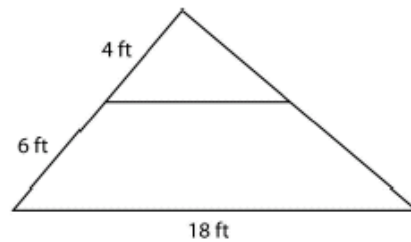
6. Triangles CDE and QRS are similar. The perimeter of the smaller triangle CDE is 133 m. The lengths of two corresponding sides on the triangles are 53 m and 212 m. What is the perimeter of QRS?

8. 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 = 1 yard?

7. 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?



9. 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?



- Answers: 1. 3ft 2. 16.8m 3. 125ft 4. 570 m 5. 4.8 m
 6. 532 m 7. 800 cm 8. 30 in by 16 in 9. 7.2 ft