| /10 | **Chapter 8 Scale Diagrams & Reductions** |

Review

1. The actual length of a needle is 6 cm. The length of the needle on a scale diagram is 9 cm. What is the scale factor of the enlargement?
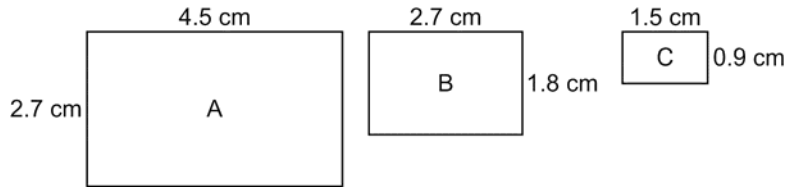
2. The dimensions of a photo of a mountain bike are 15 cm by 12 cm. An enlargement is to be made for a poster with dimensions 4.0 m by 3.2 m. What is the scale factor of the poster to the nearest tenth?

3. A scale factor is given for each of the following.
   Determine the corresponding reduction length in centimetres on the scale diagram.

   a) Fishing rod length 280 cm, scale factor $\dfrac{1}{50}$

   b) Boogie board length 1.5 m, scale factor 0.05

   c) Jogging route 10 km, scale factor 0.000 02
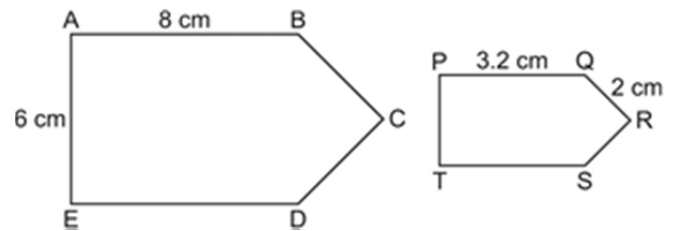
4. Which rectangles are similar? Give reasons for your answer.

4.5 cm   2.7 cm   1.5 cm

2.7 cm   A   B   1.8 cm   C   0.9 cm

5. These polygons are similar.
   Determine each length.

   a) PT

   b) BC

A   8 cm   B

6 cm   C

E   D
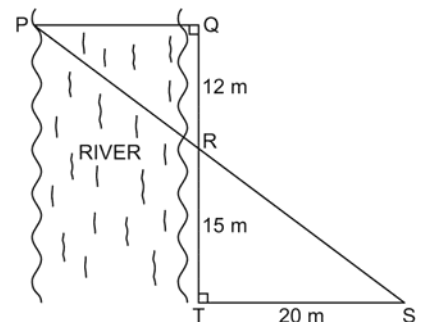
P   3.2 cm   Q
                  2 cm
T   R
        S

6. A person who is 1.9 m tall has a shadow that is 1.5 m long.
   At the same time, a flagpole has a shadow that is 8 m long.
   Determine the height of the flagpole to the nearest tenth of a metre.
   Draw a diagram.

7. A surveyor wants to determine the width of a river.
   She measures distances and angles on land,
   and sketches this diagram.
   What is the width of the river, PQ?

P   Q

        12 m

RIVER   R

        15 m

T   20 m   S

8. Determine the length of XY in each pair of similar triangles.

a)

b)