

Name - \_\_\_\_\_

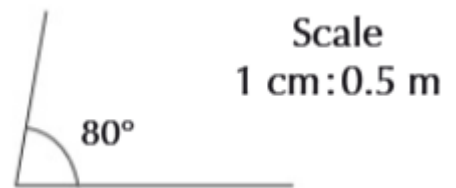
Start time - \_\_ : \_\_

End time - \_\_ : \_\_

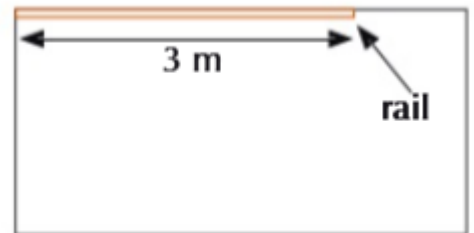
Solve the following:

1. A ship sails so that it is always the same distance from a port P and a lighthouse L. The lighthouse and the port are 3 km apart.
  - a) Draw a scale diagram showing the port and lighthouse. Use a scale of 1 cm:1 km.
  - b) Show the path of the ship on your diagram.

2. Two walls of a field meet at an angle of  $80^\circ$ . A bonfire has to be the same distance from each wall and 3 m from the corner. Copy the diagram on the right, then use a ruler and pair of compasses to show the position of the fire.



3. A walled rectangular yard has length 4 m and width 2 m. A dog is secured by a lead of length 1 m to a post in a corner of the yard.



- a) show on an accurate scale drawing the area in which the dog can move. Use the scale 1 cm: 1 m.
  - b) The post is replaced with a 3 m rail mounted horizontally along one of the long walls, with one end in the corner as shown. If the end of the lead attached to the rail is free to slide, show the area in which the dog can move now.
4.
    - a) Construct a triangle with sides 4 cm, 5 cm and 6 cm.
    - b) Draw the locus of all points which are exactly 1 cm from any of the triangle's sides.