*All the questions on this worksheet require a great deal of accuracy. Make sure that you use a sharp pencil and a ruler or compass if necessary. You have to do a scale drawing for most questions – choose a sensible scale that can be seen clearly.*

1. Loki the locust is crouching at a point marked L. He can jump anywhere within 1 metre of this point. Shade this area purple. (Think carefully about the shape this creates)
2. Draw a line 6 cm long. Construct the set of points (locus) that is exactly 3 cm from this line.
3. Construct a rectangle that measures 5 cm by 7 cm. Construct the set of points (locus) that are within 3 cm of this rectangle.
4. Norbert has a garden measuring 10 m by 10 m. The house adjoins one side of the square exactly. Draw the garden and shade the following sections with an appropriate colour:

* Everywhere within 2 m of the house is laid with concrete as a patio.
* The area within 1 m of the back wall of the garden is a flower bed.
* The rest of the garden is lawn.

1. A garden measures 12 m by 15 m. The house adjoins the 12 m edge and there is an apple tree in the centre of the garden. Turf is to be laid over the garden subject to the following conditions:

* the lawn must not be within 1 m of the house
* the lawn must not be within 2 m of the tree

Shade the lawn area green.

1. A rectangular field measures 60 m by 100 m. A goat is tethered to the midpoint of one of the longer sides by a rope of length 30 m. Shade the region that the goat can graze.
2. A hungry dog is tethered to the corner of a 20 m by 30 m farmyard by a rope of length 8 m. Shade the region in which any chickens are safe.
3. A 23 m by 12 m barn lies within a field. A donkey is tethered to the corner of the building by a 15 m rope. Shade the area in which the donkey can wander. Think very carefully!!
4. Make up some similar problems of your own.