

Geometry – Loci – Loci around shapes

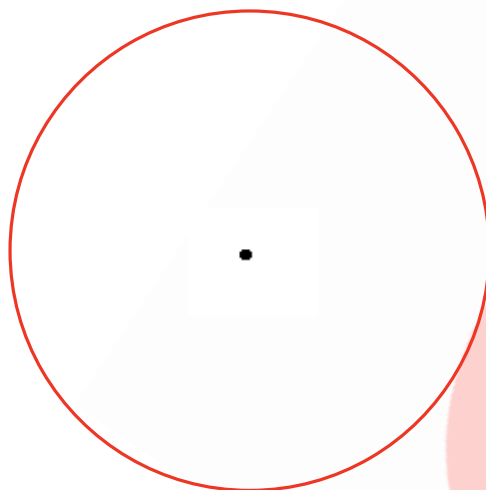
Recap

1. Define what is meant by the word “loci”
A set of points that satisfy certain conditions.
2. Define what is meant by the word “construction” in loci.
We can only use a compass and a straight edge
3. The loci around a fixed point is a *circle*

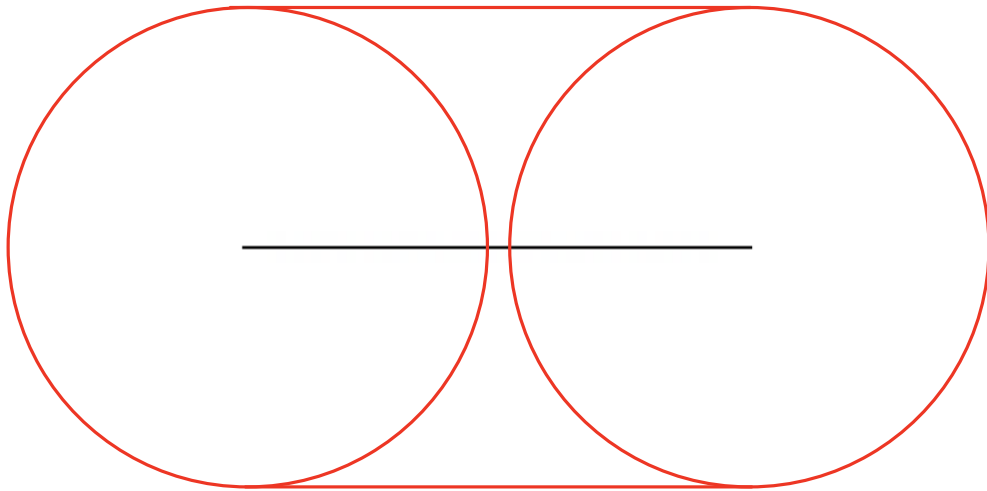
Core

1. Find the set of point which are 3cm away from the following shapes:

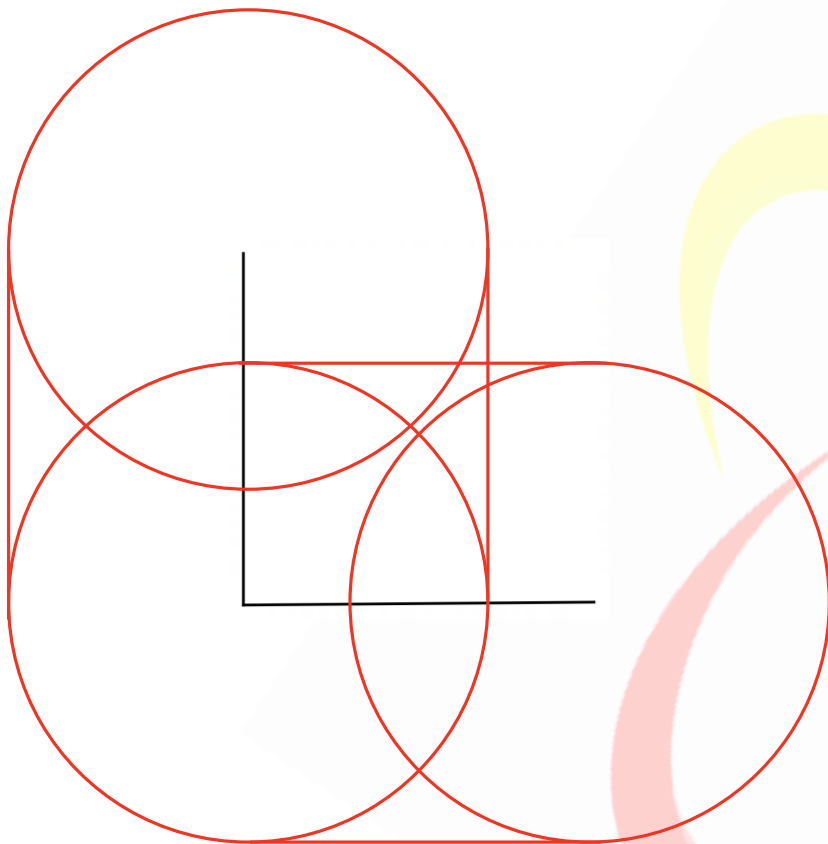
a.



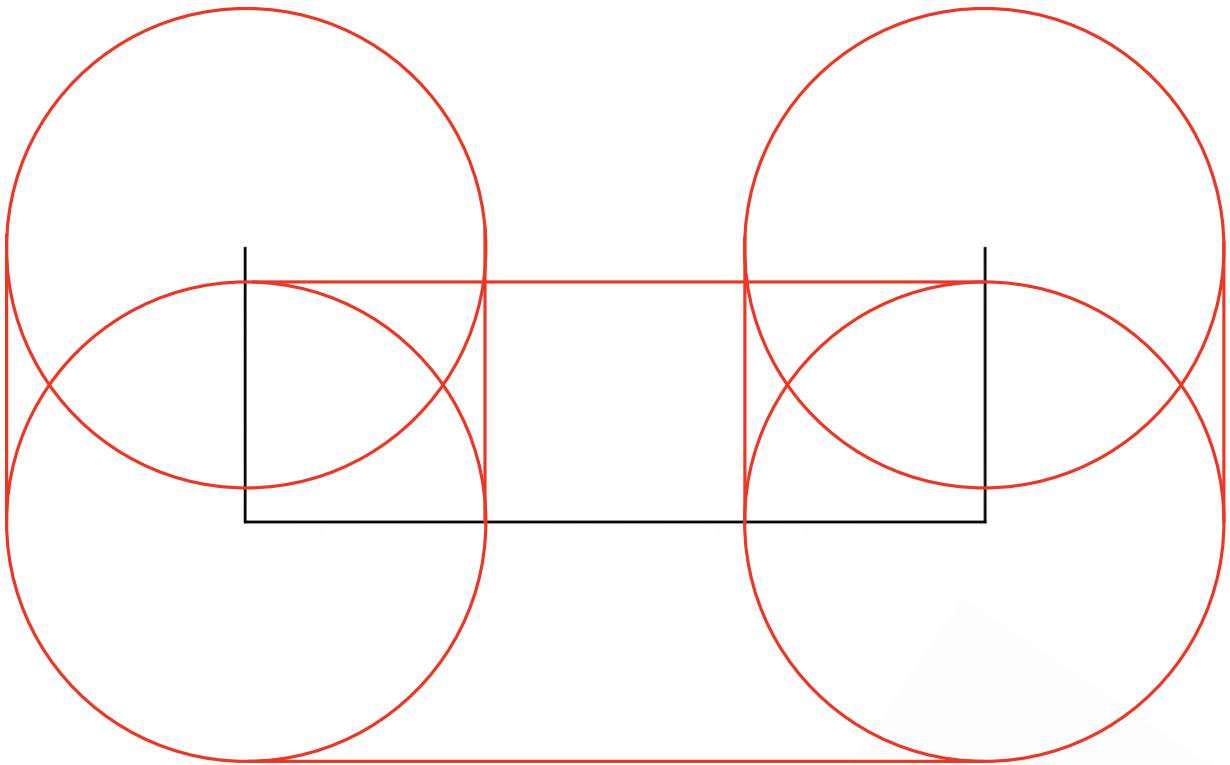
b.



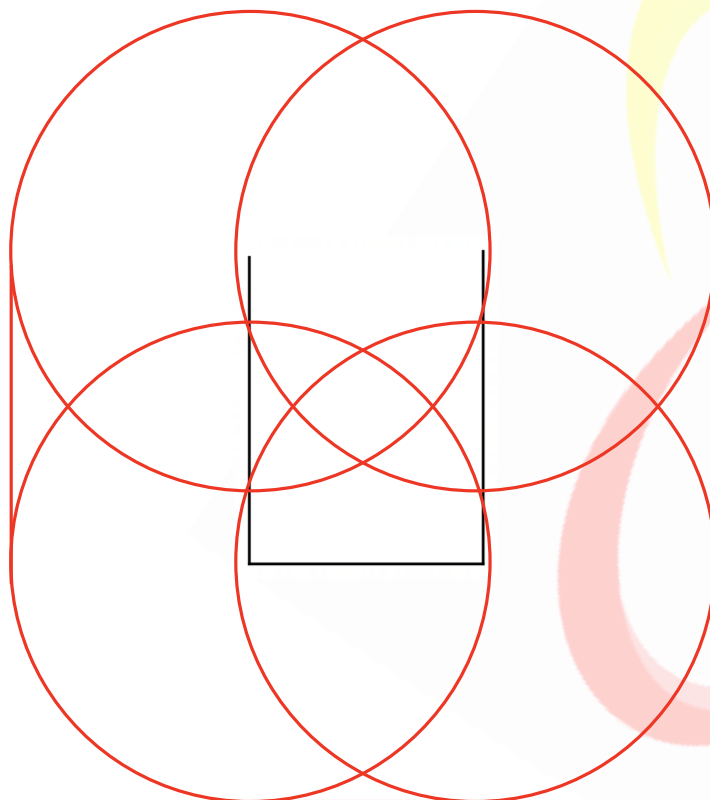
c.



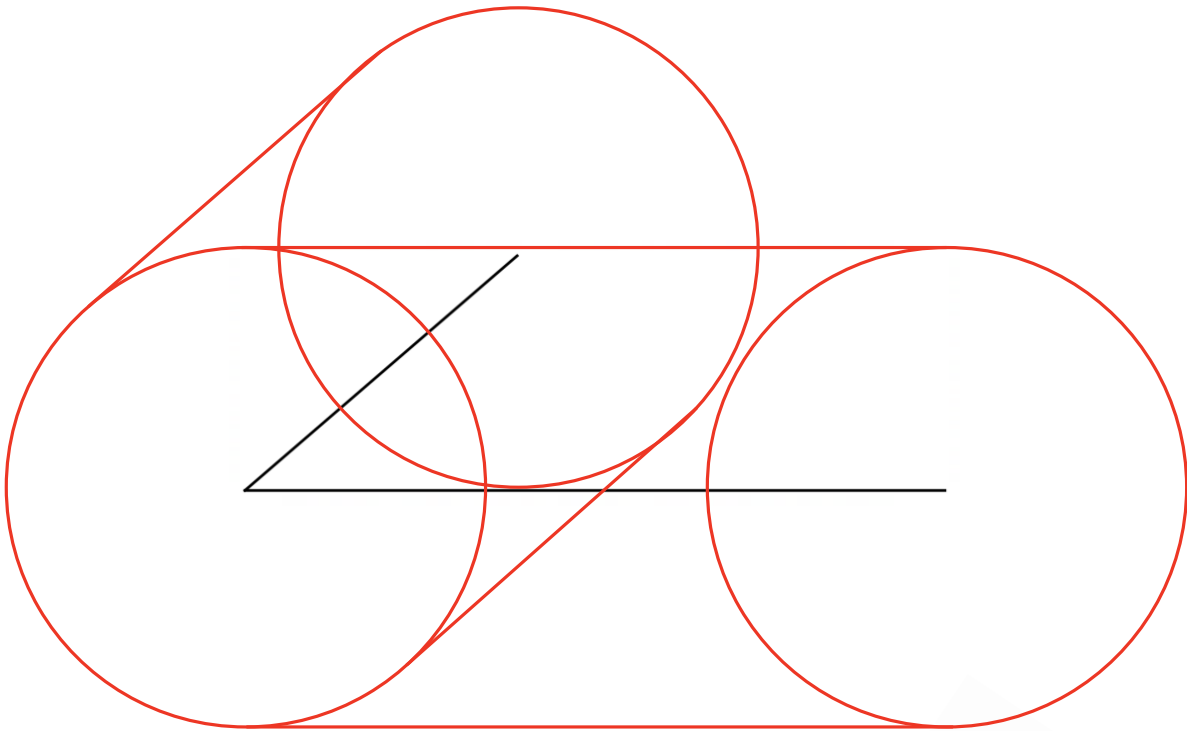
d.



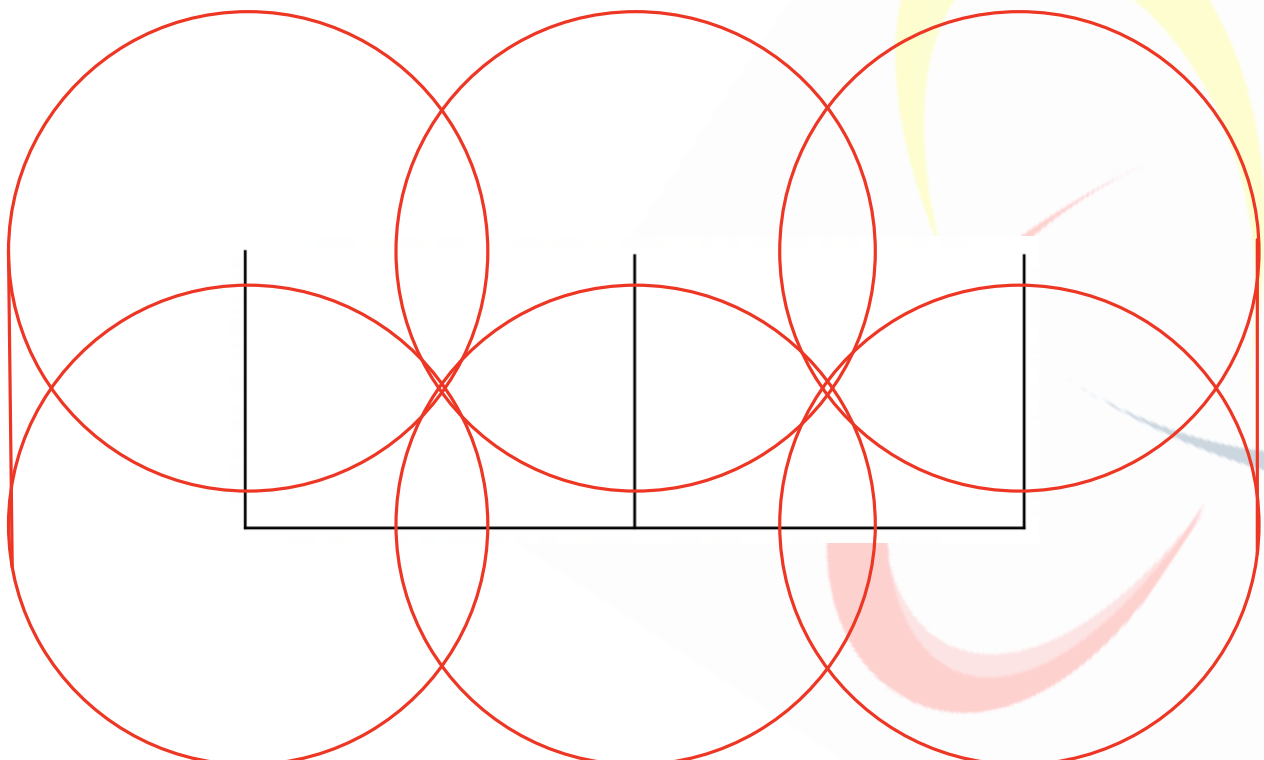
e.



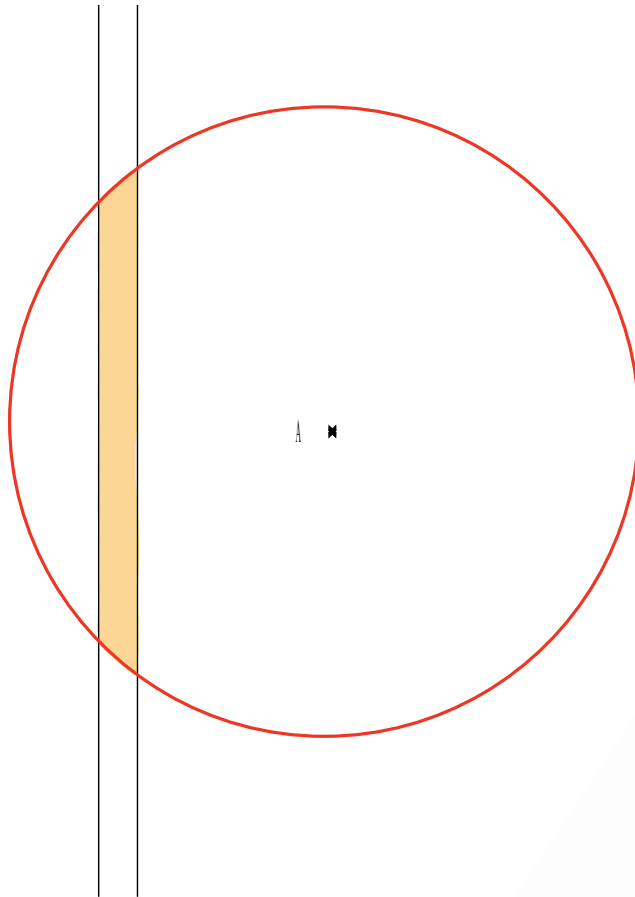
f.



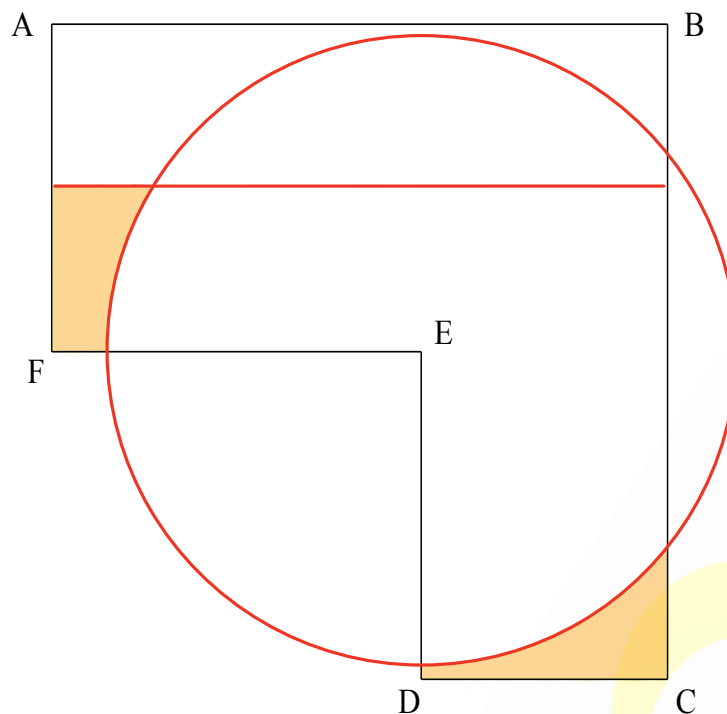
g.



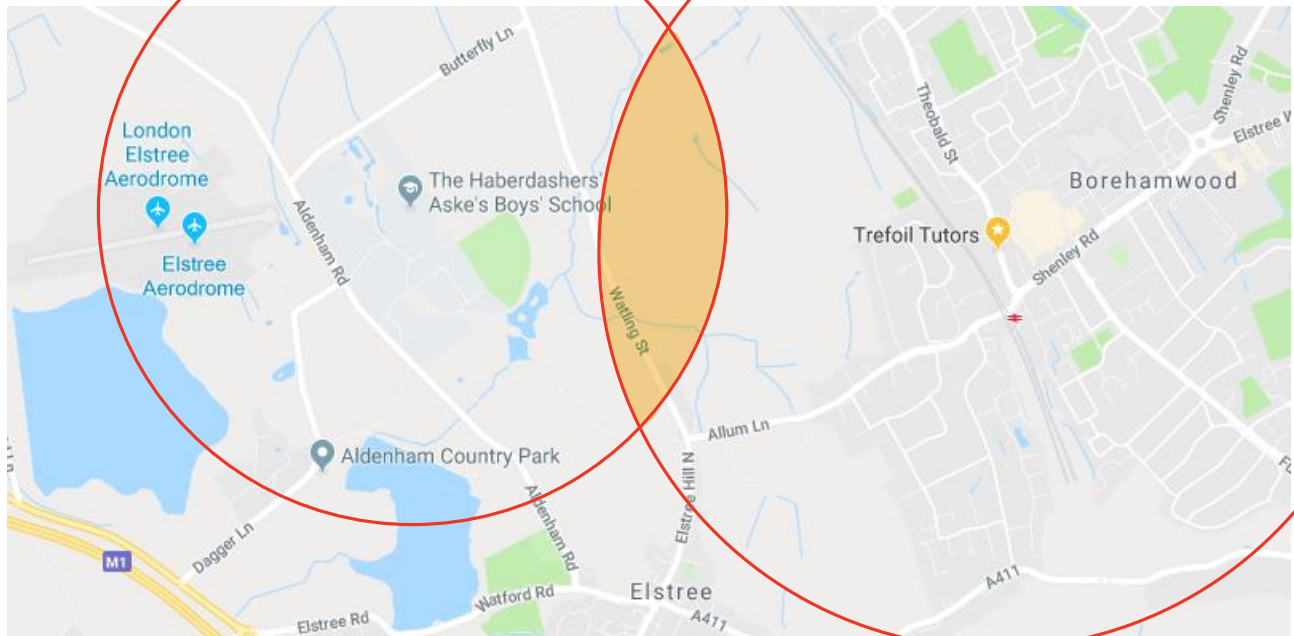
2. A vicious dog is tied to a post at the point A marked on the plan below. It is tied by a rope 4m long. Using a scale of 1cm:1m show the locus of the furthest points the dog can reach. A path runs near the post. Shade the region of the path under threat from the dog.



3. The plan of a garden is shown below. A fixed sprinkler is positioned at E. The sprinkler sprays water a distance of 4m. The house is positioned along the edge AB and 2m of patio is laid next to the house. The remainder of the garden is lawn. If the gardener wants to water all the lawn, shade the area which the gardener will need to water by hand. Use a scale of 1cm:1m

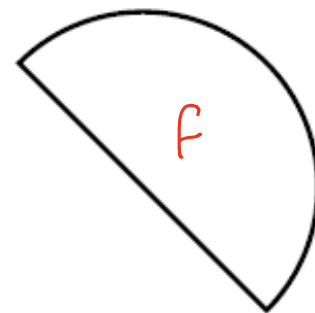
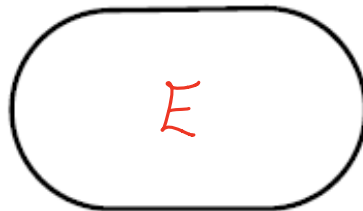
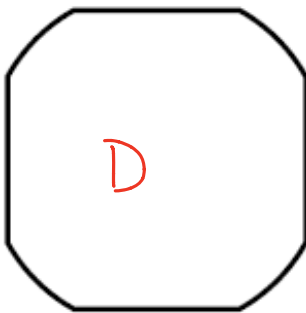
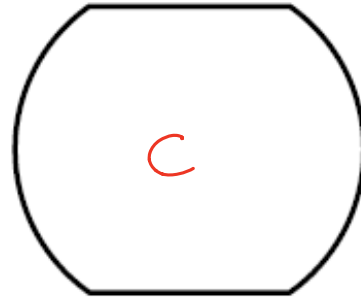
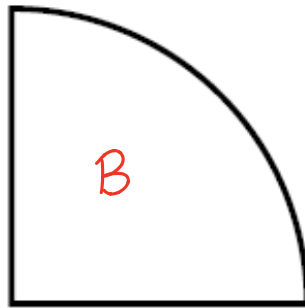
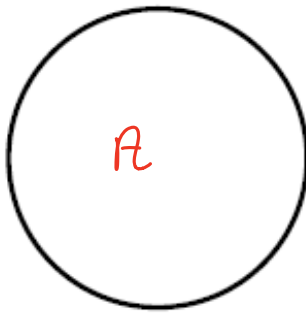


4. The map below has a scale of 1cm to 500m. Vivek is thinking of relocating the Trefoil Tutors office. He wants the office to be no more than 2.5km from the old office and no more than 2km from Haberdashers' Aske's Boys' School. Shade the possible locations of the office.



Extension

1. Vivek and Milda's pet cat, Zpoodie, is only allowed out of the house if he is on a lead. The lead is 5m long. Match the correct picture of the description given below



- B** • Zpoodie's lead is tied to the corner between the garden fence and the side of the house
- C** • Zpoodie's lead is tied to a fixed post in the middle of a rectangular field which is 20m in length and 8m in width
- A** • Zpoodie's lead is tied to fixed post in the middle of a square field which is 20m in length
- E** • Zpoodie's lead is tied to a horizontal bar in a large field, where his lead is free to move along the bar
- F** • Zpoodie's lead is tied to a fixed post in the middle of the garden fence
- D** • Zpoodie's lead is tied to a fixed post in the middle of a square field which is 9m in length