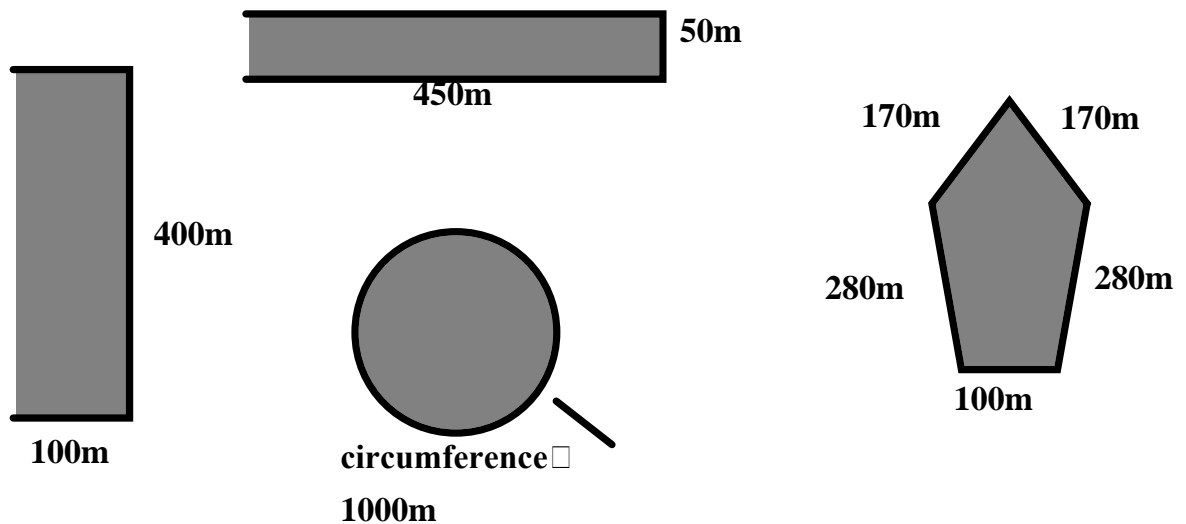# The Fencing Problem

A farmer has exactly 1000 metres of fencing. With it she wishes to fence off a plot of level land.

She is not concerned about the shape of the plot, but it must have a perimeter of 1000m. So it could be:

50m

450m

400m

100m

170m   **170m**

280m   **280m**

100m

circumference☐

1000m

Or anything else with a perimeter (or circumference) of 1000m

What she does wish to do is fence off the plot of land which contains the **maximum** area.

Part 1   By using scale drawings, or otherwise examine some possible figures for the plot of land. In each case ensure that the perimeter is 1000m and obtain the enclosed area.

Part 2   Investigate the shape, or shapes of the plot of land, which have the maximum area.