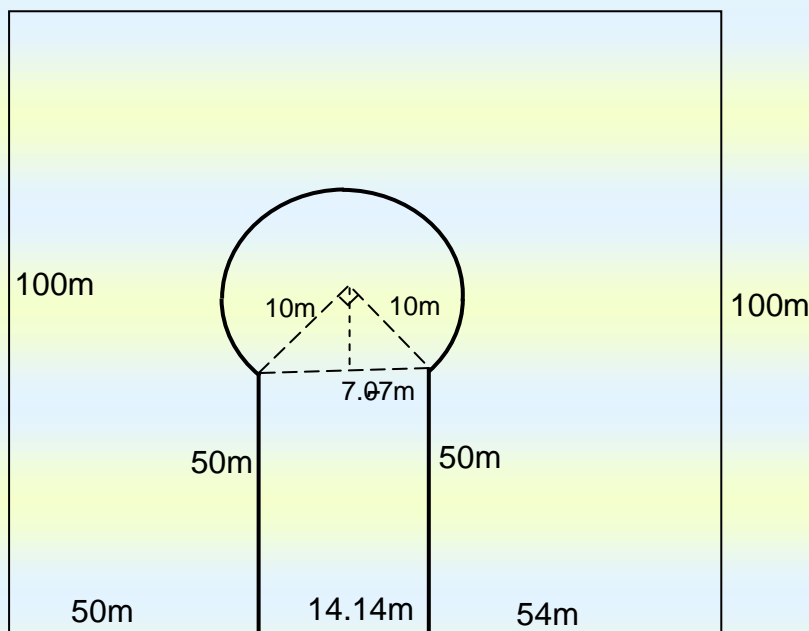


MATHEMATICS

Level One

Culs-de-sac

Setting: The block of land below is going to be subdivided into sections. A short cul-de-sac will be placed in the middle of the block for access. The radius of the circular arc that forms the head of the circle is 10m



- 1) Calculate the area of the rectangle block in hectares
- 2) Calculate the area of the cul-de-sac to the nearest 0.1m^2
- 3) Calculate the area remaining for the sections to the nearest 0.1m^2
- 4) If the areas of each section have to be at least 650m^2 calculate the maximum number of lots.
- 5) If a 1m wide footpath went down the left hand side of the road, around the cul-de-sac head and down the right hand side of the road, calculate the length of the of footpath required. For this problem, assume the lengths to be calculated are along the centreline of the footpath.
- 6) How much area will the footpath occupy?
- 7) For safety reasons you decide to build a roundabout in the centre of the cul-de sac. If its radius is 3m how much area will it take up?

- 8) What will the approximate final area of roading be?
- 9) The road is to be sealed with asphalted concrete. This cost \$16.50 per m². How much will it cost to seal the road?