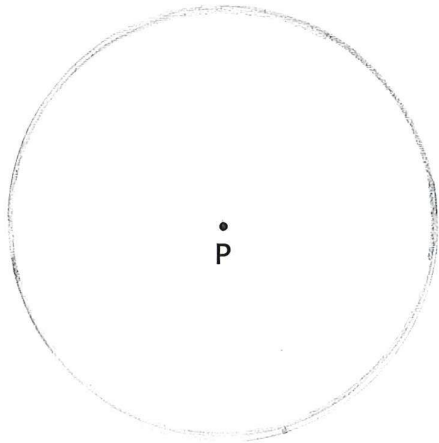
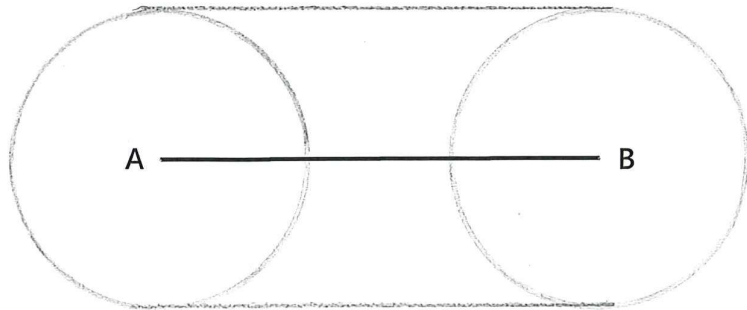


LOCI & CONSTRUCTIONS

- 1) Point P is shown below. Construct the locus of all points that are exactly 3 cm from P.



- 2) Line segment AB is shown below. Construct the locus of all points that are exactly 2 cm from the line segment. Leave your construction lines.



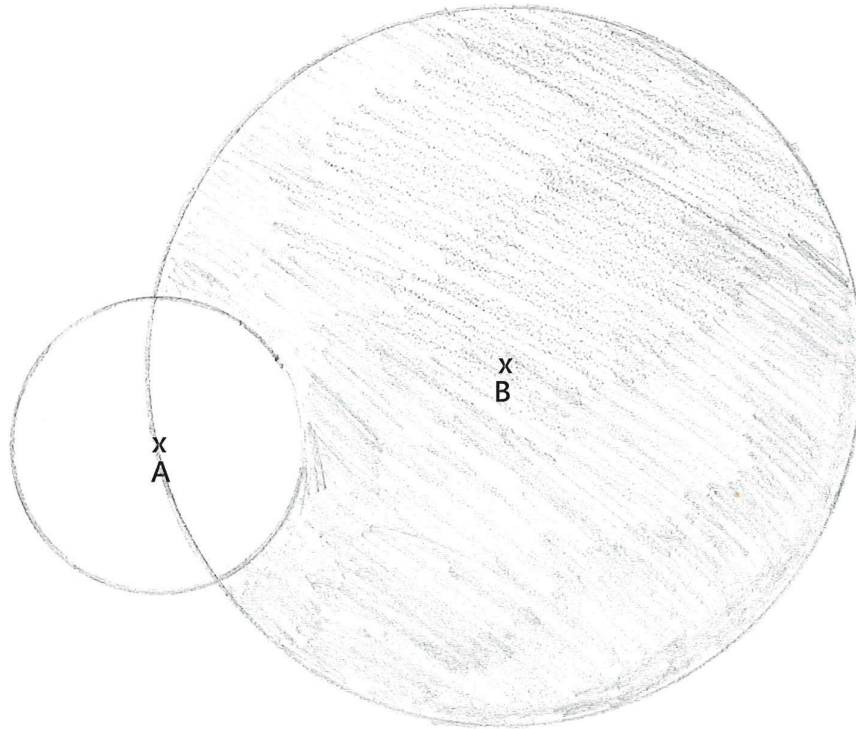
- 3) Point Q is shown below. Shade the region that represents all points that are less than 5 cm from Q.



4) A diagram shows two points that represent phone masts. People can receive 5G service in areas that are:

- More than 2 cm from A and
- Less than 5 cm from B

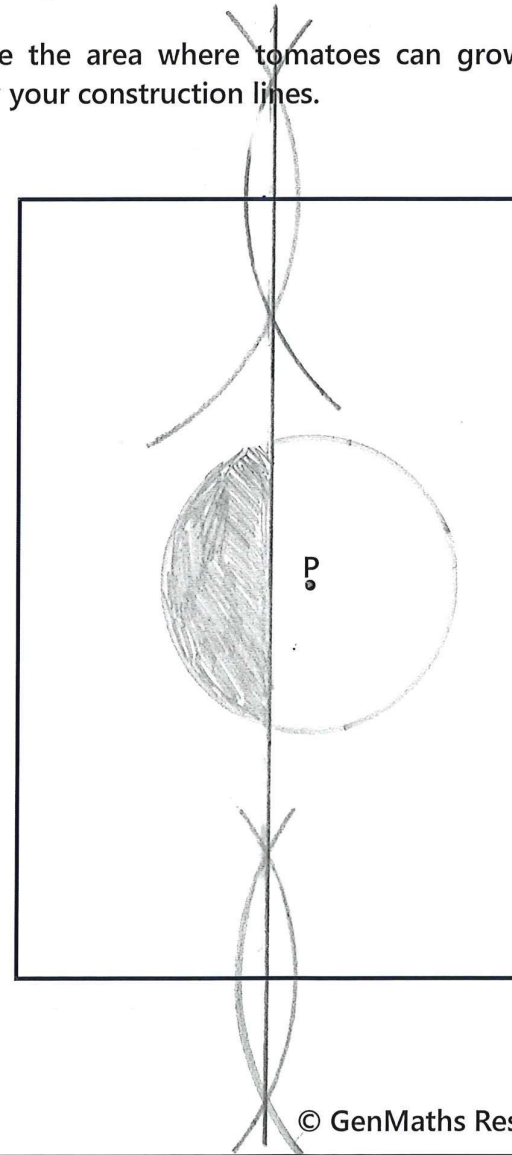
On the diagram, shade the region where people can receive 5G service.



5) A rectangular garden is shown in the diagram below. Tomatoes can only grow in areas that are:

- Less than 2 cm from point P and
- Closer to the left side of the garden than to the right side

Shade the area where tomatoes can grow. You must show your construction lines.



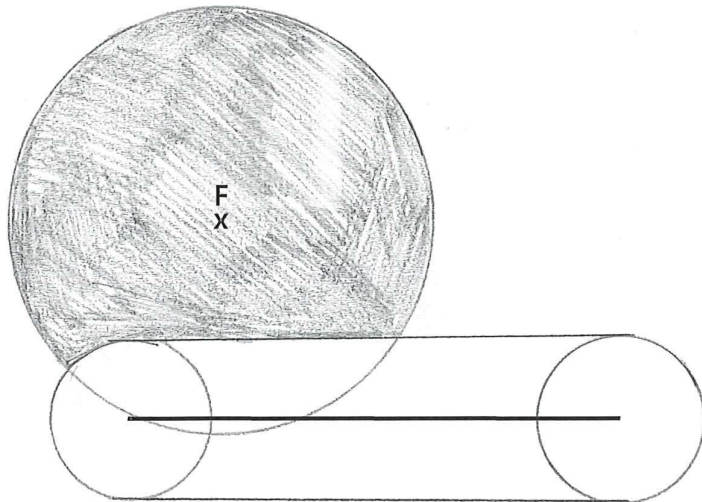
6) On the diagram below, a fountain is represented by point F and a footpath is represented by a line segment.

A bench must be placed:

- Within 6 m of the fountain, and $3\text{ cm} = 6\text{ m}$
- More than 2 m from the footpath

1 cm represents 2 m.

Shade the possible region where the bench may be placed. You must show your construction lines.



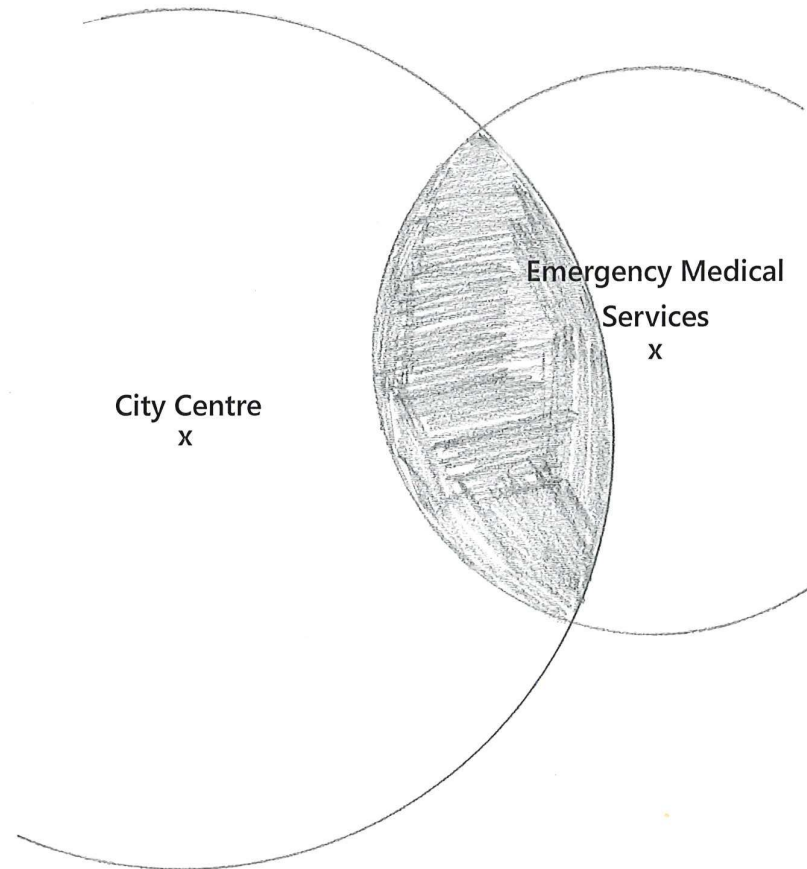
7) An airport will be built in a city next year. It must be no more than 18 km from the city centre and no more than 12 km from the emergency medical services centre.

1 cm represents 3 km.

$6\text{ cm} = 18\text{ km}$

$4\text{ cm} = 12\text{ km}$

Shade the region below where the airport can be built.



8) P, Q and R are points on a scale diagram of a house.

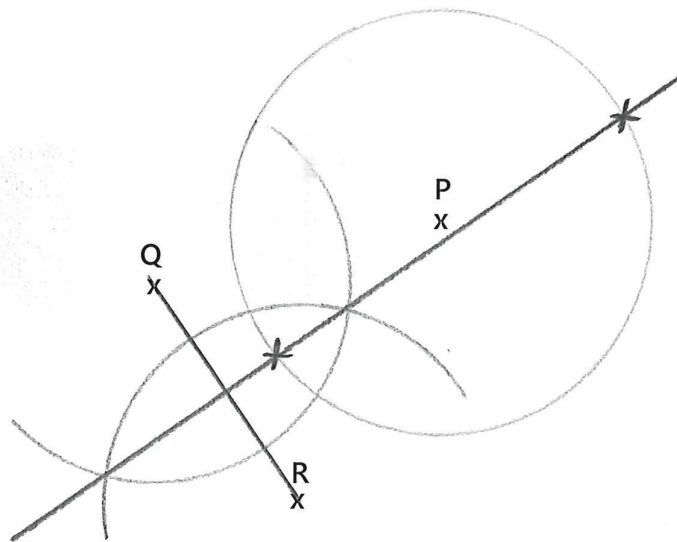
1 cm represents 2.5 m.

$$3 \text{ cm} = 7.5 \text{ m}$$

Point T is 7.5 metres from point P.

Point T is equidistant to points Q and R.

On the diagram, mark the possible position(s) of T with a cross (x).



9) A scale drawing of a park is shown on the diagram below.

A café is going to be built in the park.

The café must be more than 10 metres from the lake.

The café must be more than 15 metres from the playground.

$$10 \text{ m} = 2 \text{ cm}$$

$$15 \text{ m} = 3 \text{ cm}$$

The scale is 1 cm to 5 m.

Shade the region where the café can be built.

