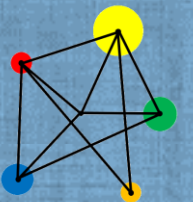


Loci



Draw loci of points using given rules.

Vocabulary

Locus

A set of points defined by a given rule.

Equidistant

The same distance.

Loci

The plural of locus.

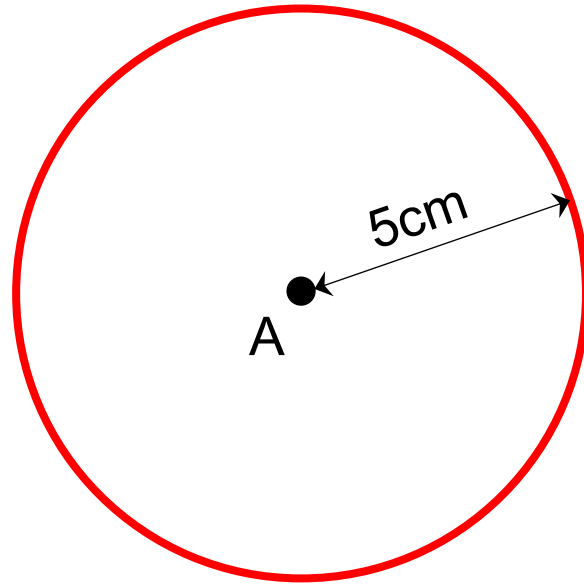
Question

What would the loci of points that are exactly 5cm from point A look like?



Solution

The loci would be a circle with radius of 5cm.



The loci of points equidistant from a point is a circle.

Example

The black line is 10 cm long.

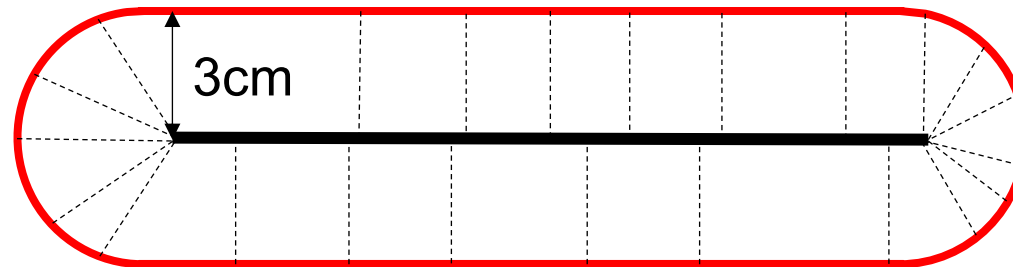
Draw the loci of points that are exactly 3cm from the line.



Solution

The black line is 10 cm long.

Draw the loci of points that are 3cm from the line



Example

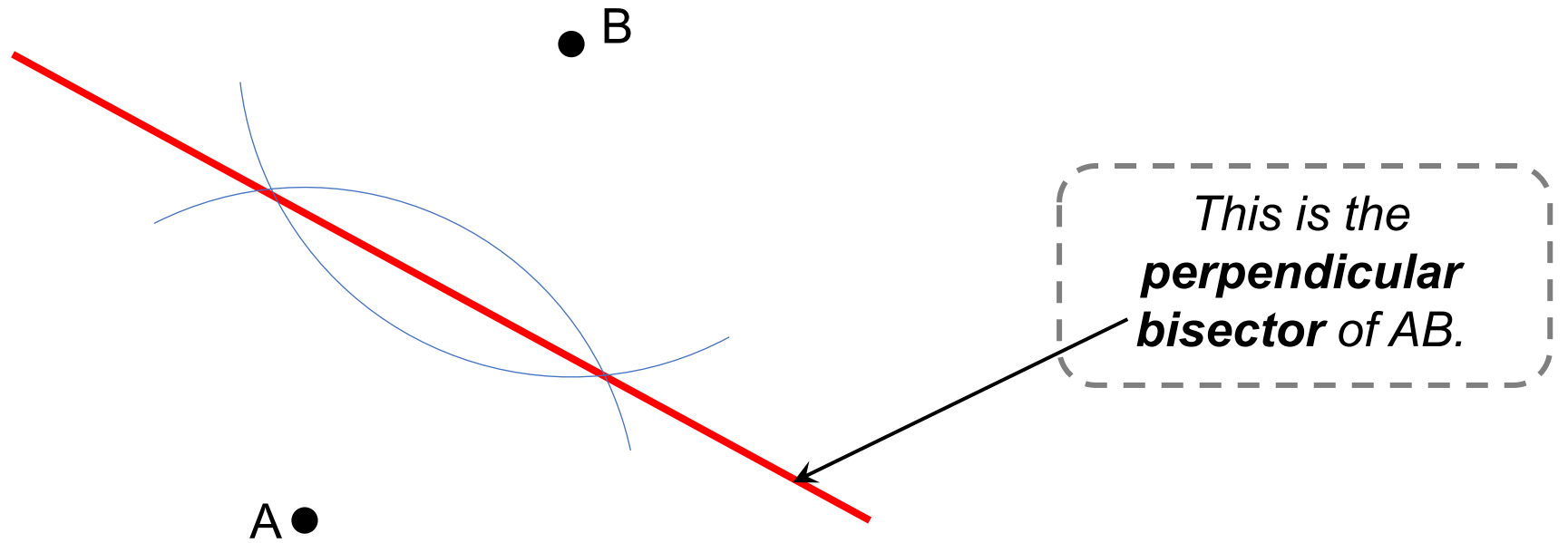
Draw the loci of points that are **equidistant** from the points A and B.

A ●

● B

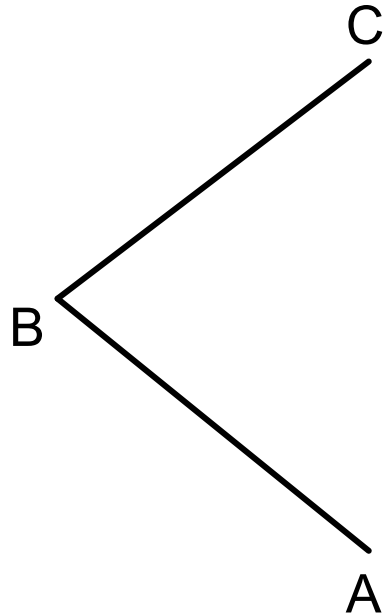
Solution

Draw the loci of points that are equidistant from the points A and B.



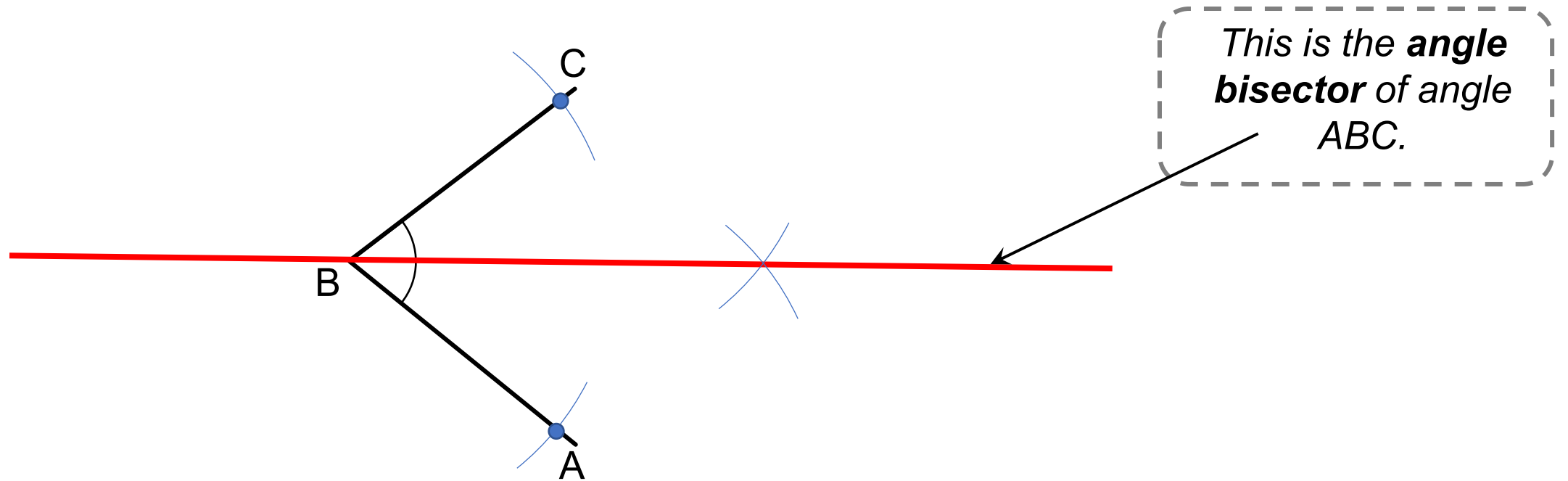
Example

Draw the loci of points that are equidistant from the lines AB and AC.



Solution

Draw the loci of points that are equidistant from the lines AB and AC.



Draw the loci of points that are less than 4cm from point A.



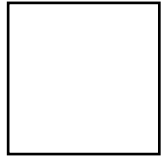
Draw the loci of points that are equidistant from points B and C



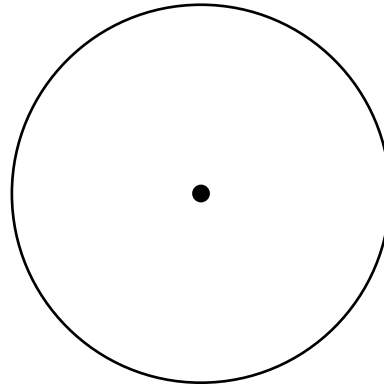
Draw the loci of points that are equidistant from lines DE and EF



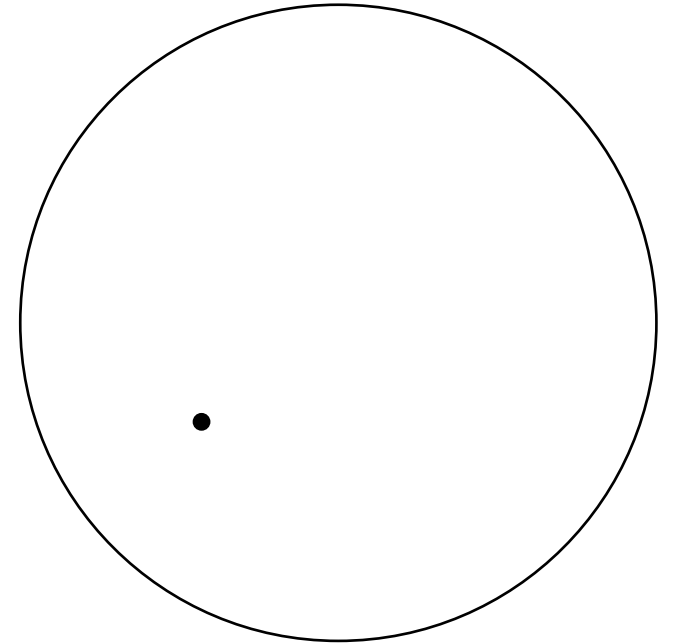
Draw the loci of points that are less than 3cm from the square.



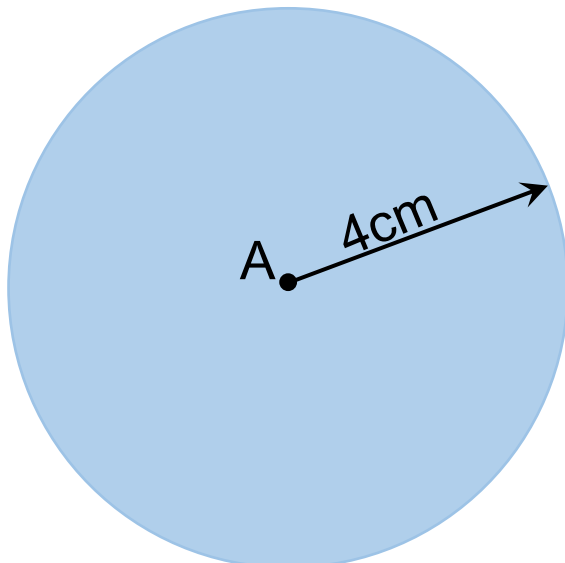
Draw the loci of points that are 1cm from the circle.



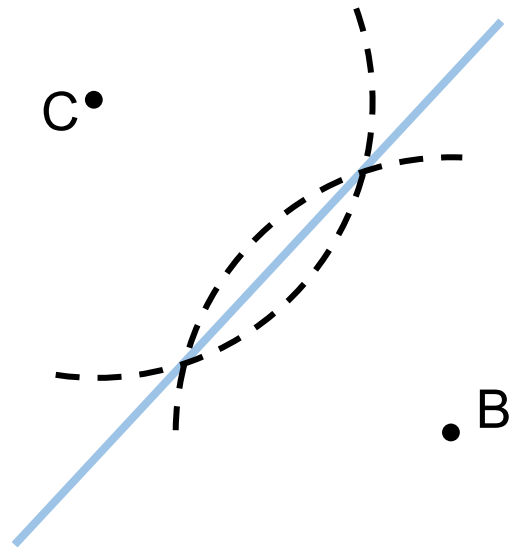
Draw the loci of points that are equidistant from the circle and the point inside the circle.



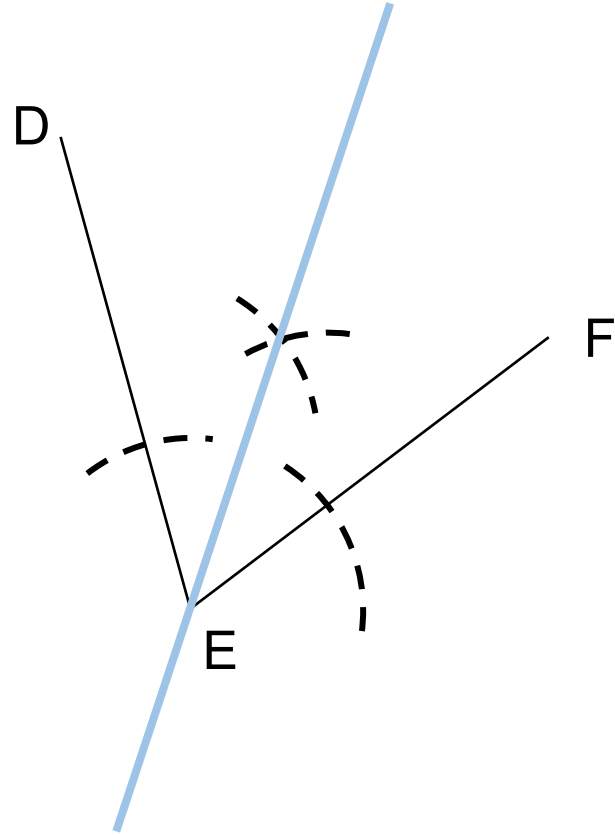
Draw the loci of points that are less than 4cm from point A.



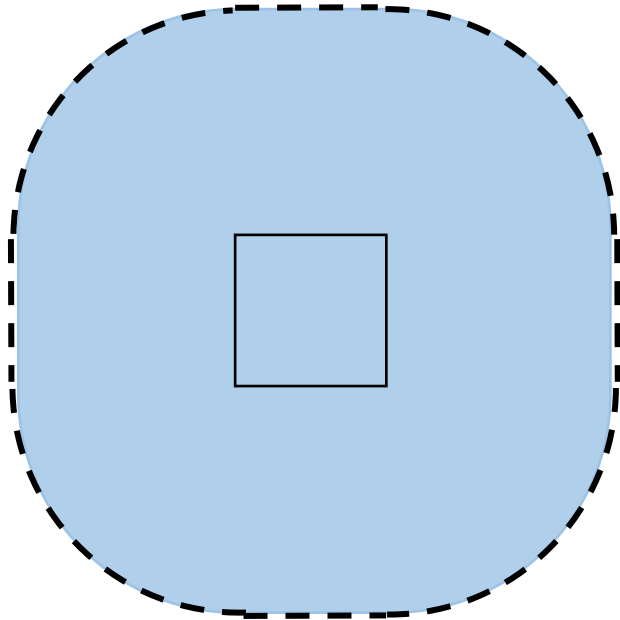
Draw the loci of points that are equidistant from points B and C



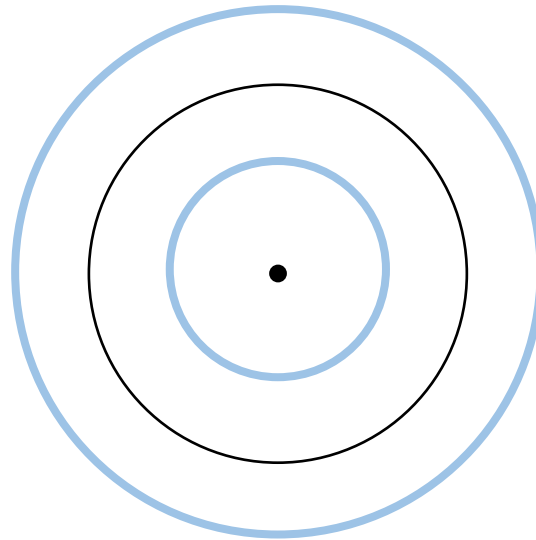
Draw the loci of points that are equidistant from lines DE and EF



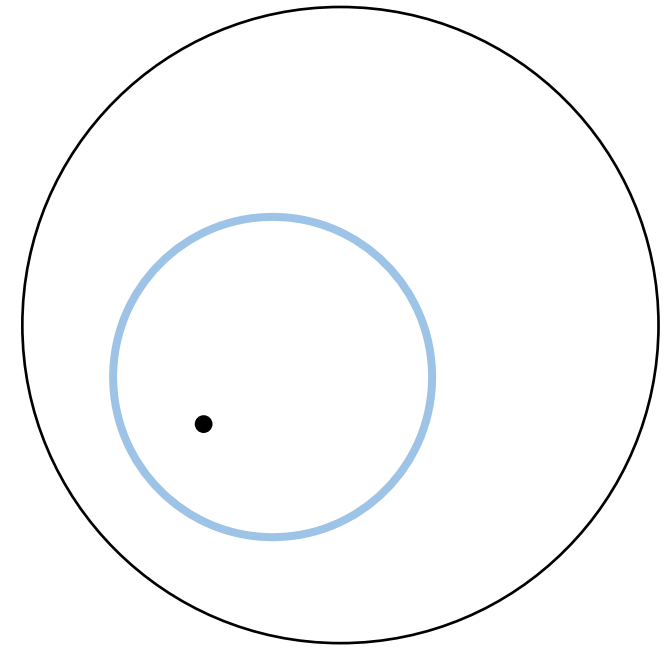
Draw the loci of points that are less than 3cm from the square.



Draw the loci of points that are 1cm from the circle.



Draw the loci of points that are equidistant from the circle and the point inside the circle.

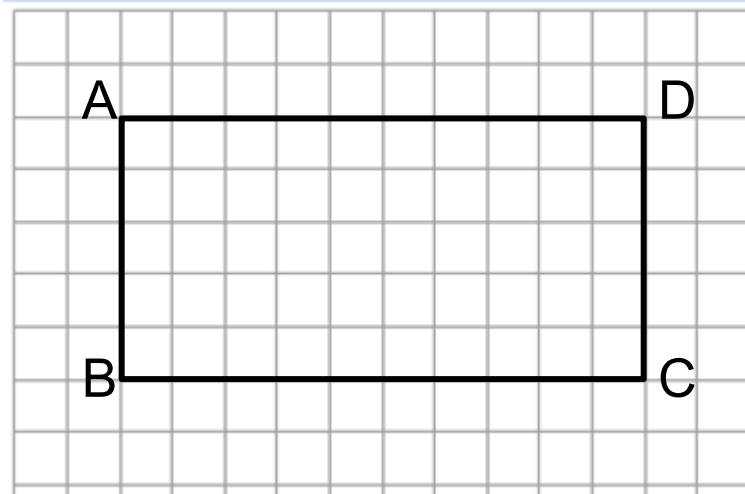


Example

The rectangle ABCD is drawn on a centimeter grid.

Shade the set of points that are:

More than 4cm from point C and more than 2cm from line AB.

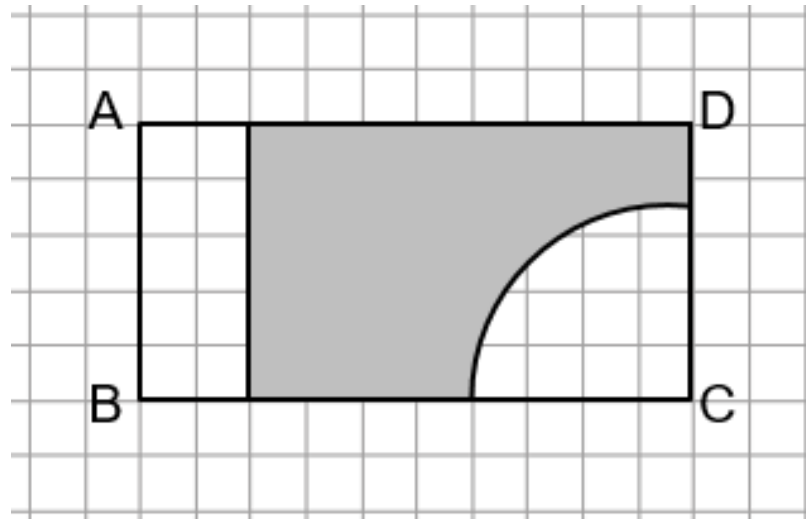


Solution

The rectangle ABCD is drawn on a centimeter grid.

Shade the set of points that are:

More than 4cm from point C and more than 2cm from line AB.

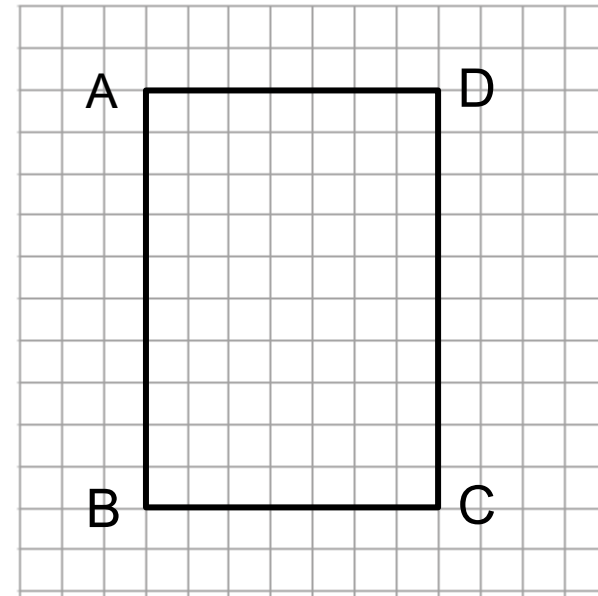


You try ...

The rectangle ABCD is drawn on a centimeter grid.

Shade the set of points that are:

- nearer to line AD than line BC
- more than 4cm from point A

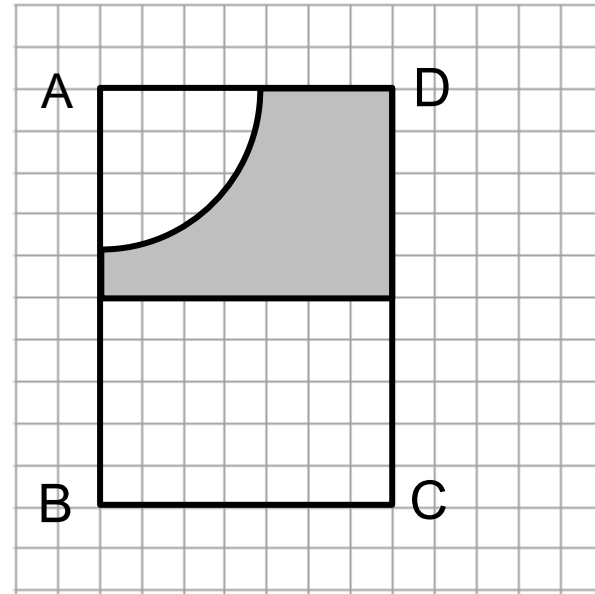


Solution

The rectangle ABCD is drawn on a centimeter grid.

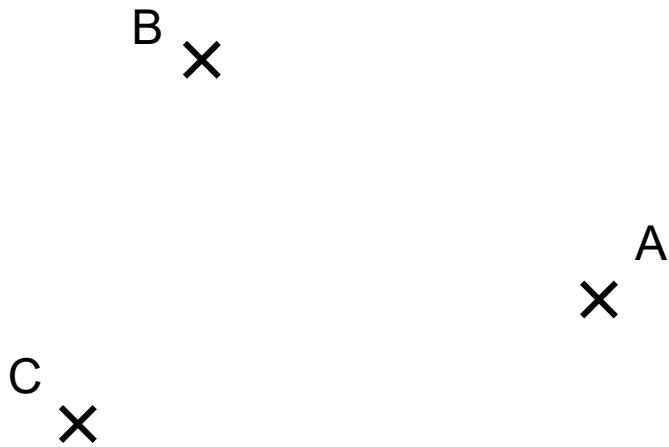
Shade the set of points that are:

- nearer to line AD than line BC
- more than 4cm from point A



Towns A, B and C are shown in the scale diagram below.

1cm represents 2km.



A telephone mast is going to be put up.

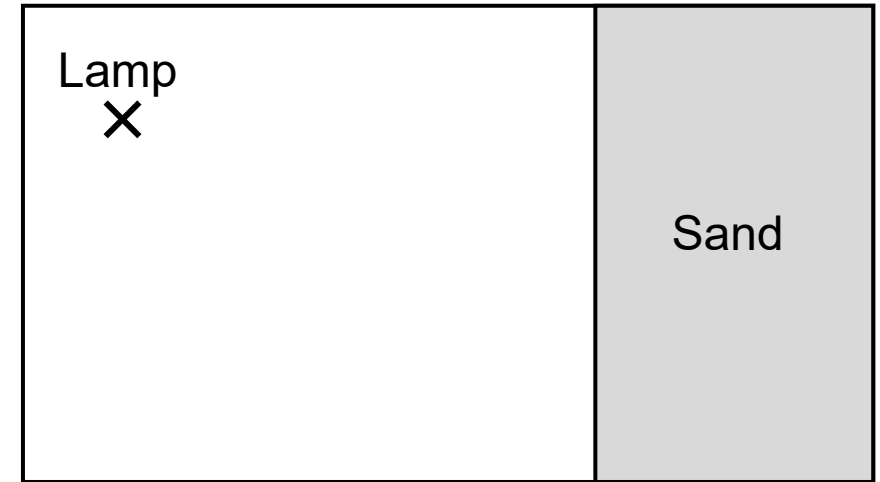
It must be less than 6km from town A.

It must be nearer to town B than town C.

On the scale diagram, show the region where the mast can be constructed.

Here is a scale drawing of a playground.

The scale is 2cm to 4m



A tree is going to be planted.

The tree must be more than 4m from the sand.

The tree must be more than 6m from the lamp.

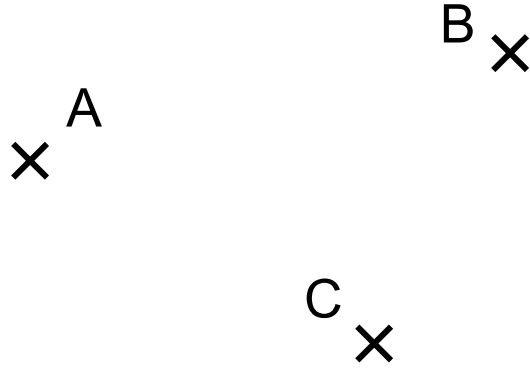
Shade the region where the tree can be planted.

A library is going to be built.

It must be less than 40km from town A.

It must be less than 20km from town B.

It must be less than 30km from town C.

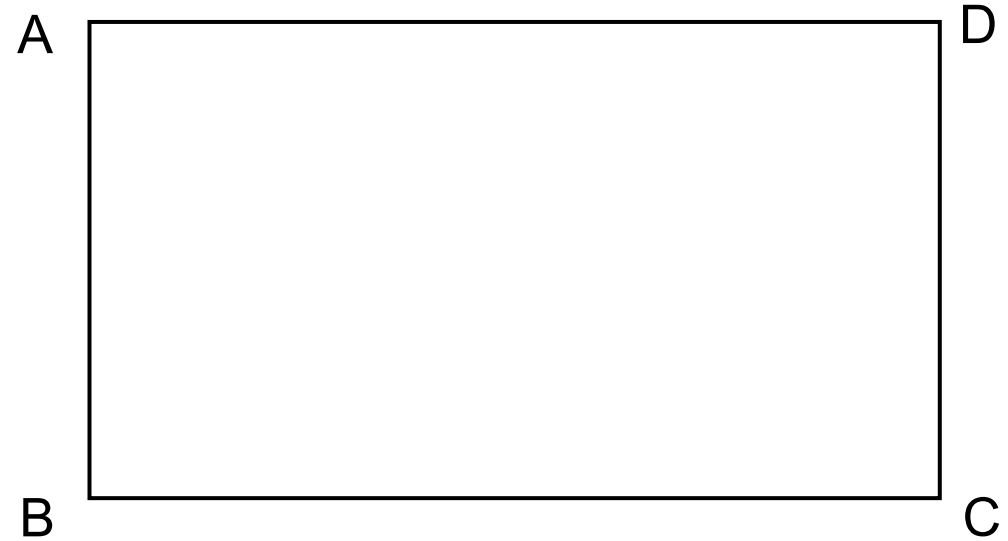


Shade the region where the library can be built.

1cm = 10km.

Here is a scale drawing of a field.

The scale is 1cm to 4m.



A water tap is going to be placed in the field.

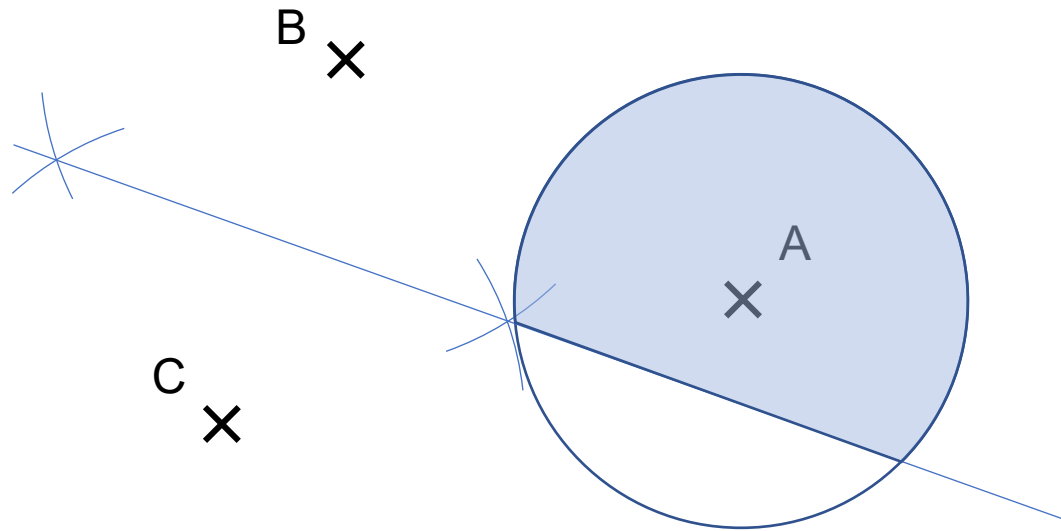
The water tap must be closer to AB than BC.

The water tap must be less than 12m from B.

Show the region where the tap can be placed.

Towns A, B and C are shown in the scale diagram below.

1cm represents 2km.



A telephone mast is going to be put up.

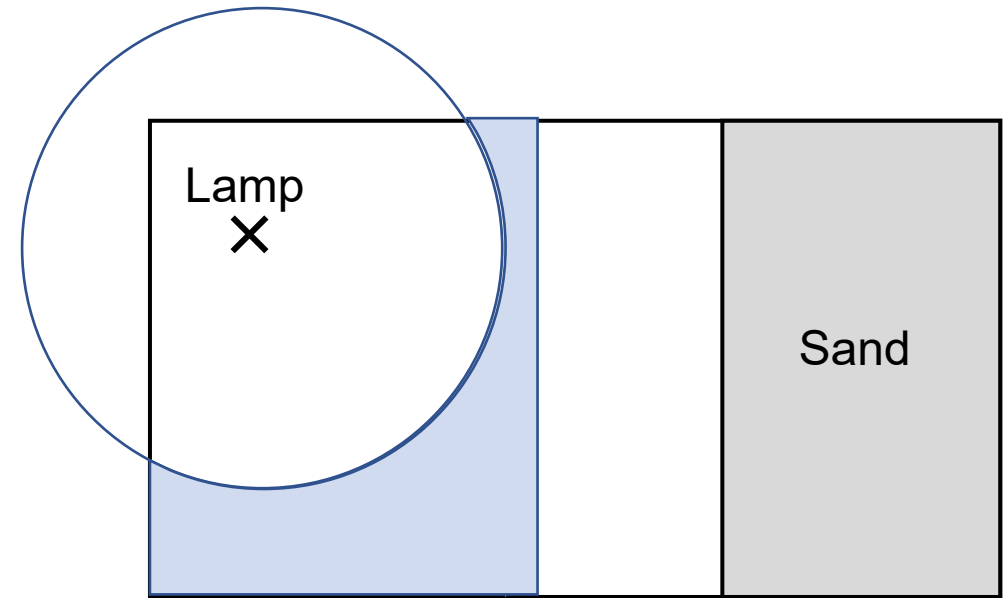
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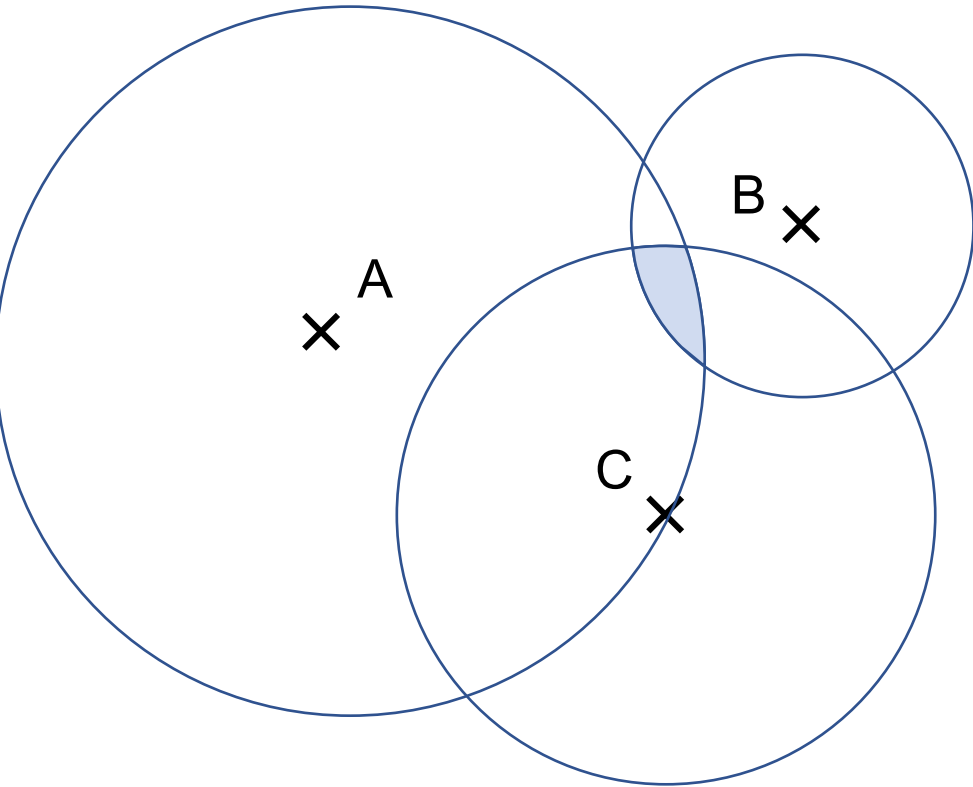
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It must be less than 30km from town C.

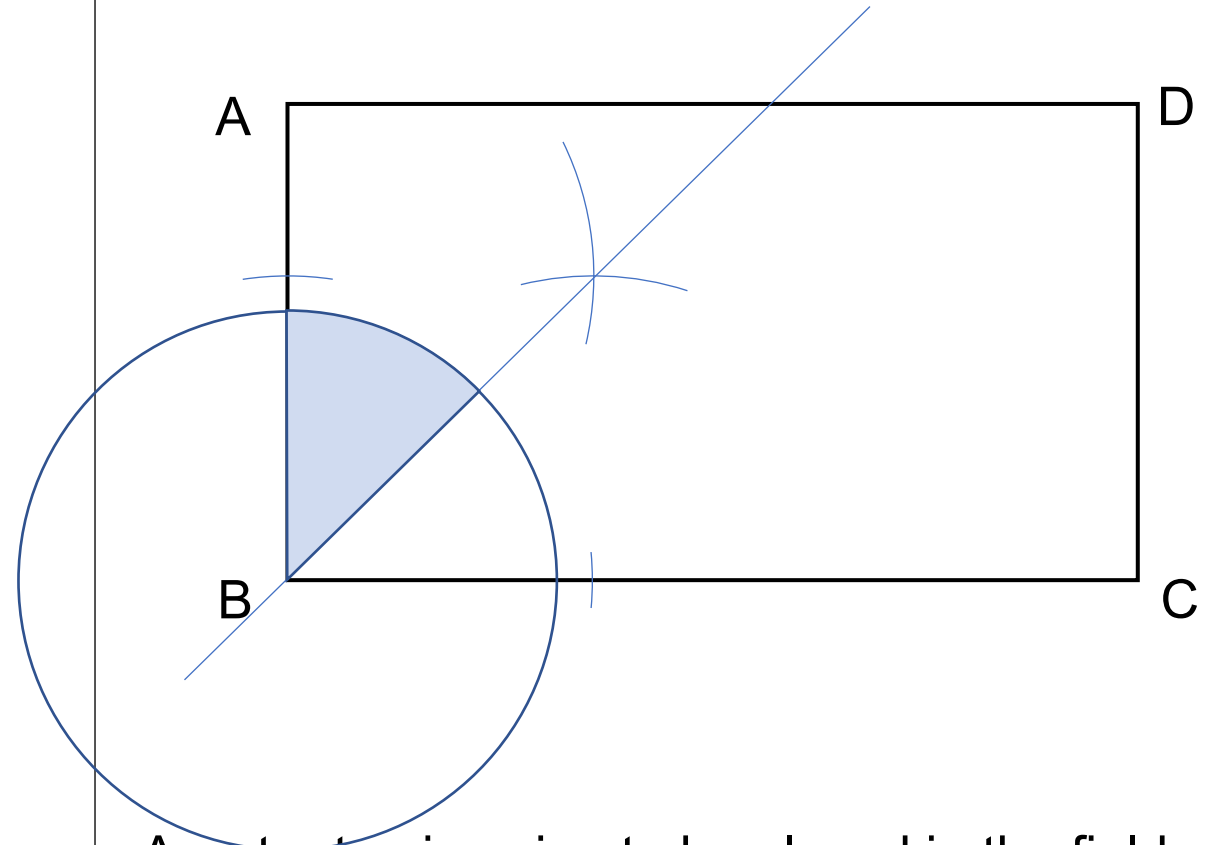


Shade the region where the library can be built.

1cm = 10km.

Here is a scale drawing of a field.

The scale is 1cm to 4m.



A water tap is going to be placed in the field.

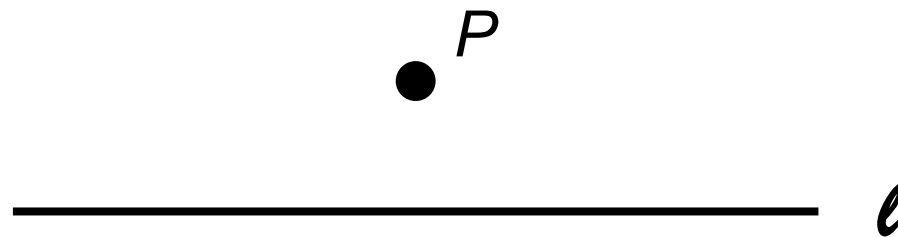
The water tap must be closer to AB than BC.

The water tap must be less than 12m from B.

Show the region where the tap can be placed.

Extension

Draw the loci of points that are equidistant from the point P and the line ℓ .



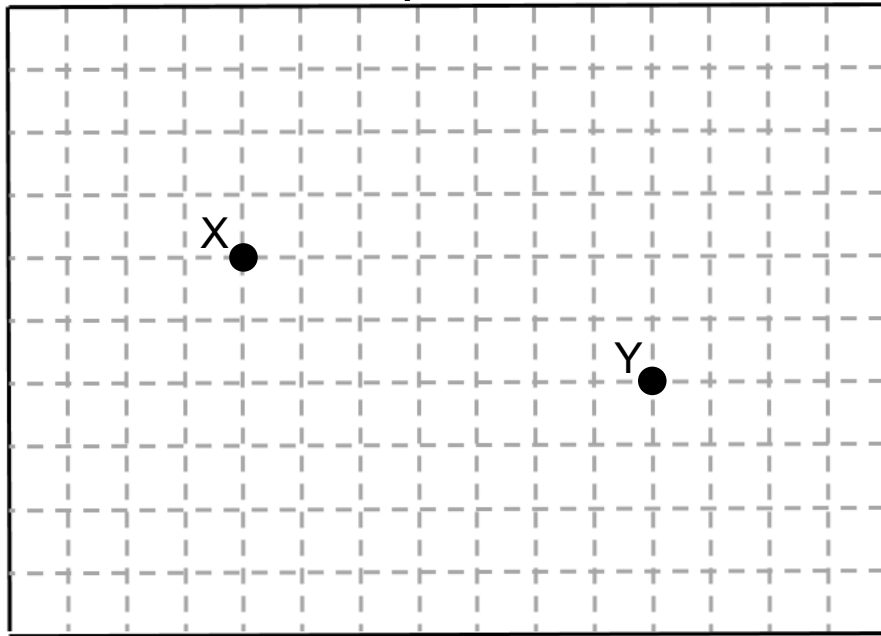
Exam Style Question

The scale drawing represents two audio speakers in a field.

Sound from the speaker at X reaches up to 60m from X.

Sound from the speaker at Y reaches up to 50m from Y.

Scale : 1cm represents 20m



Using a pair of compasses, show the region in which both speakers can be heard.

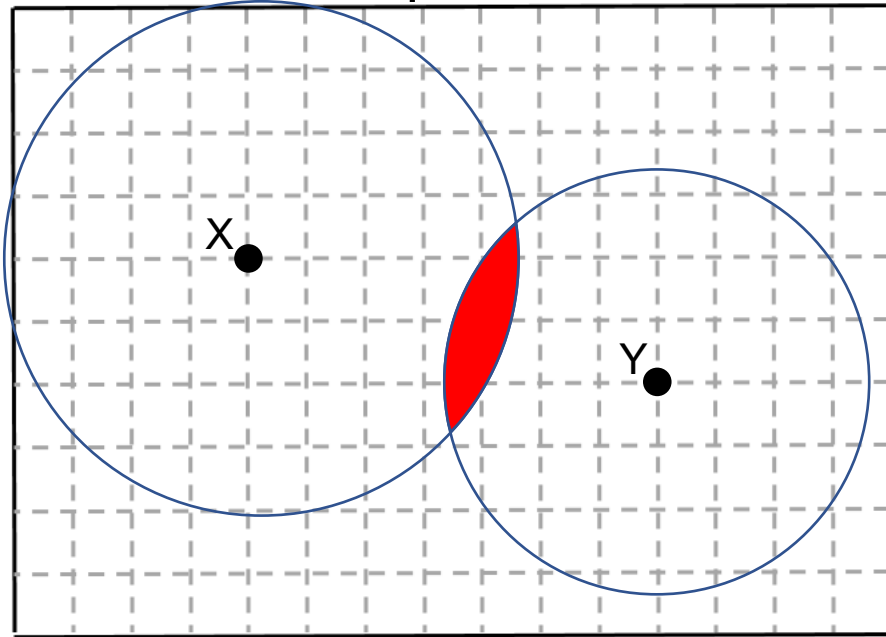
Solution

The scale drawing represents two audio speakers in a field.

Sound from the speaker at X reaches up to 60m from X.

Sound from the speaker at Y reaches up to 50m from Y.

Scale : 1cm represents 20m



Using a pair of compasses, show the region in which both speakers can be heard.