

## Programme 9 Loci

### Worksheet 1: Programme Questions

1. What is the plural of locus?

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2. What distance from the transmitter must the phone be within when Katie draws the locus of points in the range of the transmitter?

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3. What scale does Katie use to draw this locus?

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4. What shape are all the loci for the transmitters along the train track?

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5. When Jamie constructs the locus of points a fixed distance from a given line, what shape is the locus at the ends of the line?

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6. What is the mathematical expression used to describe keeping an equal distance from two parallel lines?

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7. What is the mathematical name for the path Ashton walks between the two converging lines of cones?

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8. What two places would Katie like to live halfway between if she really was a soap star?

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9. When Katie draws the perpendicular bisector, how many compass arcs does she mark on the map?

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10. In 'Tick or Trash', how did Jamie set the radius of his compasses to construct the locus?

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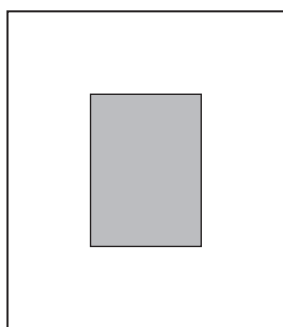
### Worksheet 2: Tick or Trash

Here are some questions and answers (by Students A and B) on loci.  
Decide which answers to Tick (correct) and which to Trash (incorrect). Give reasons.

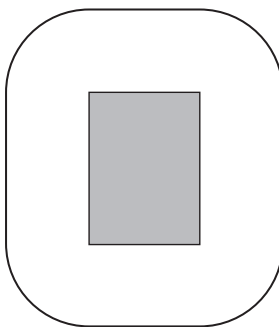
#### Question 1

On the diagram, draw the locus of the points, outside the rectangle, that are 3 centimetres from the edges of this rectangle.

**Student A Answer**



**Student B Answer**

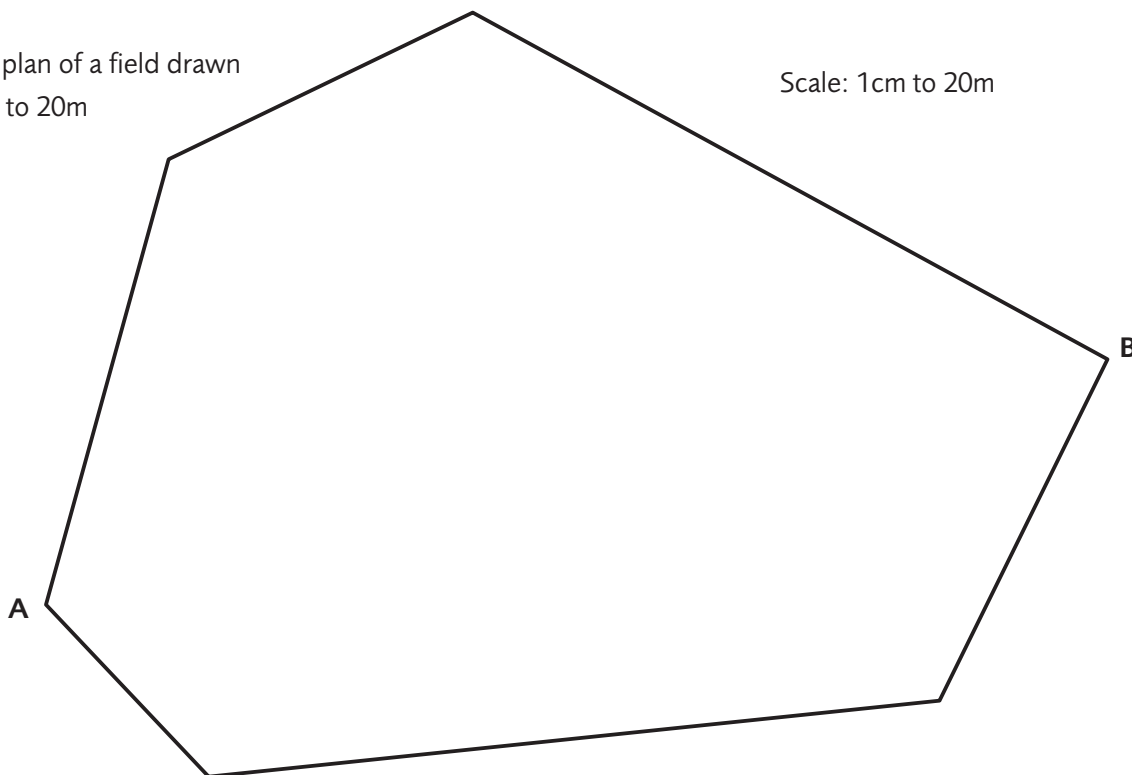


Diagrams not  
drawn to scale

#### Question 2

The diagram is a plan of a field drawn  
to a scale of 1cm to 20m

Scale: 1cm to 20m



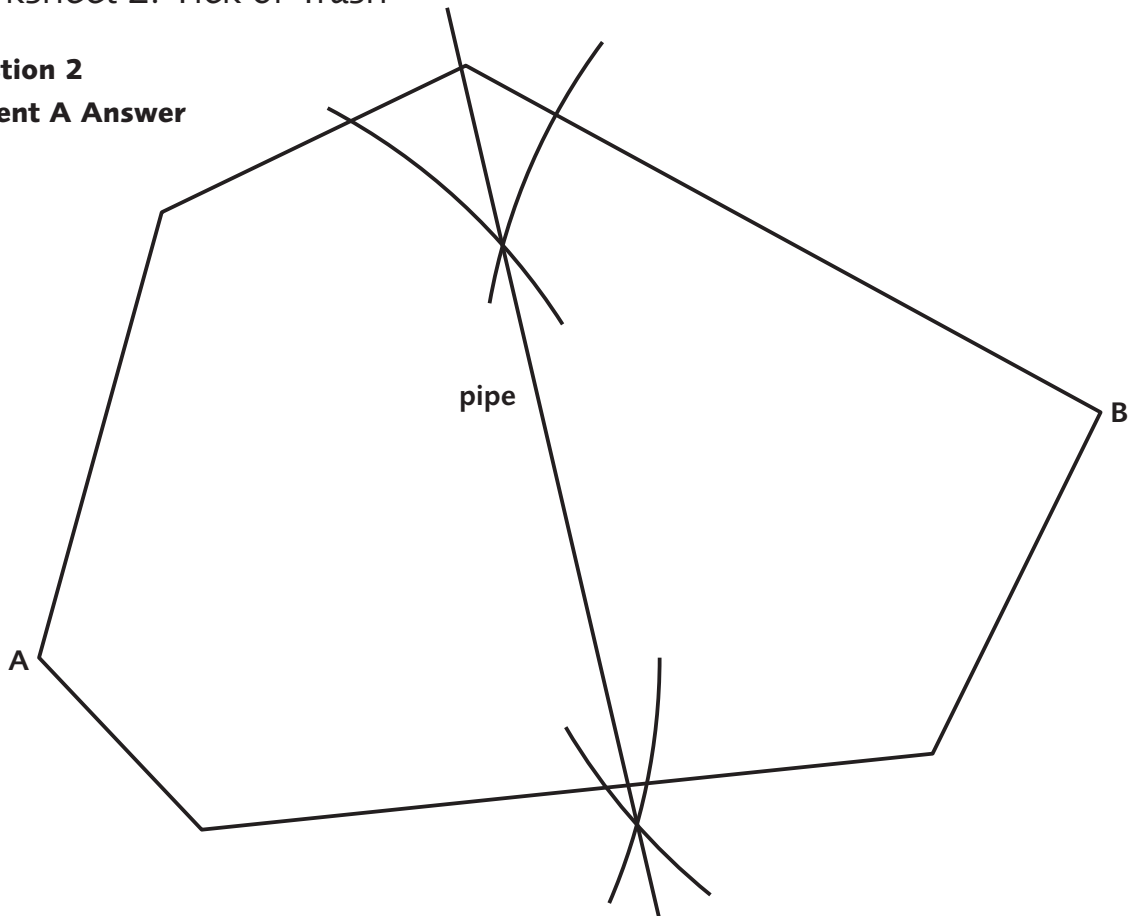
A farmer is going to lay a pipe to help water the field.  
A and B are posts which mark the widest part of the field.  
The pipe will cross the field so that it is always the same distance from A as it is from B.  
On the diagram draw a line accurately to show where the pipe should be laid.

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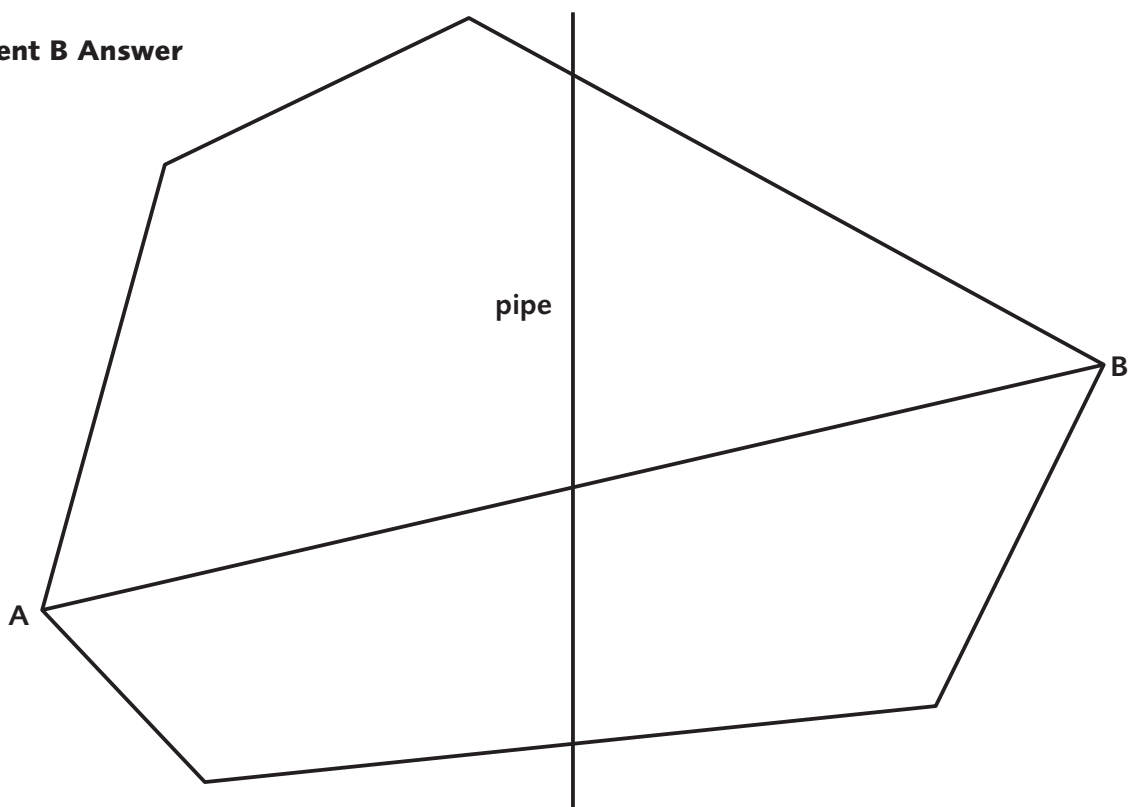
### Worksheet 2: Tick or Trash

#### Question 2

#### Student A Answer



#### Student B Answer



## Programme 9 Loci

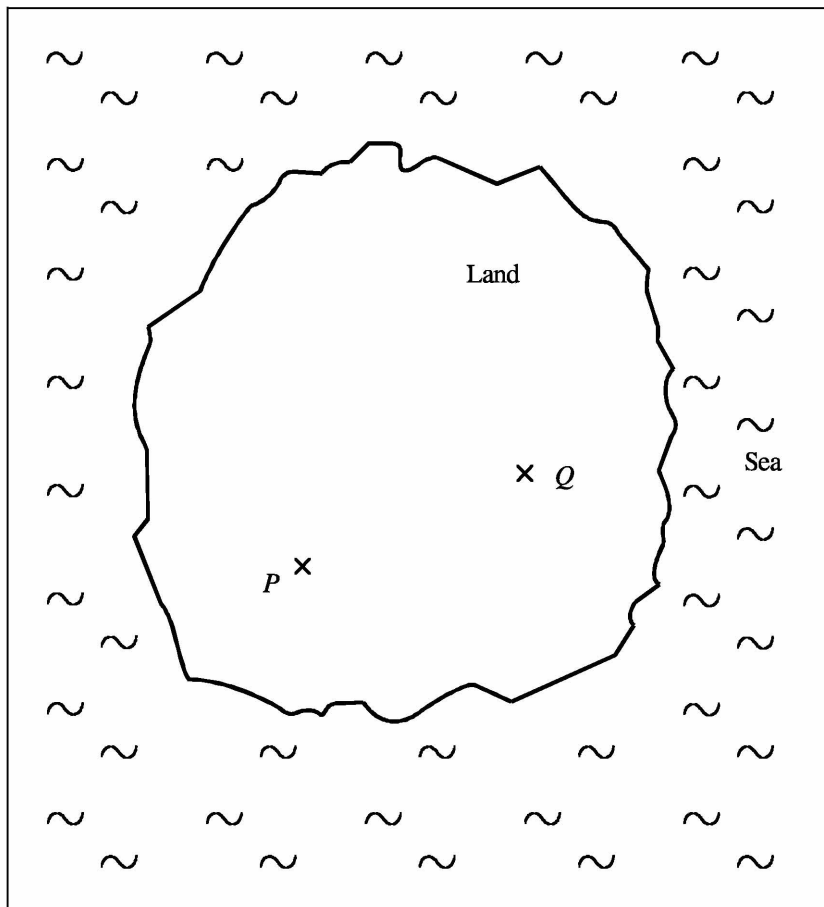
### Worksheet 3: Exam Practice Questions (Edexcel)

#### Question 1

National curriculum reference: S3e      Date: November 1998      Paper: 3

A treasure chest is buried on an island.

$P$  and  $Q$  are two trees on this island.



Scale:  
1 cm represents 5 m

The treasure chest is buried the same distance from  $P$  as it is from  $Q$ .

- (a)** On the diagram, draw accurately the locus of points which are the same distance from  $P$  as they are from  $Q$ . (2 marks)

On the diagram, 1 centimetre represents 5 metres.

The treasure chest is buried 20 metres from  $P$ .

- (b)** On the diagram, draw accurately the locus which represents all the points which are 20 metres from  $P$ . (2 marks)

- (c)** Find the point where the treasure chest is buried.  
On the diagram, mark the point clearly with a  $T$ . (1 mark)

[5]



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### Worksheet 3: Exam Practice Questions (Edexcel)

#### Question 4

National curriculum reference: S3e      Date: June 1997      Paper: 6

The scale diagram shows the position of a radio mast, M.  
1cm on the diagram represents 20km.



Signals from the radio mast can be received up to a distance of 100km.

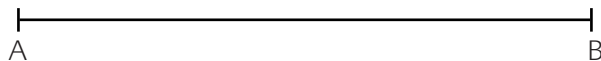
- (a) Shade the region on the scale diagram in which signals from the radio mast can be received. (2 marks)

The distance of a helicopter from the radio mast is 70km correct to the nearest kilometre.

- (b) Write down
- i) the maximum distance the helicopter could be from the radio mast,
  - ii) the minimum distance the helicopter could be from the radio mast. (2 marks)
- [4]

#### Question 5

National curriculum reference: S3e      Date: June 1999      Paper: 5



Draw the locus of all points which are 3cm away from the line AB.

[3]

**Total = 17**