

Delta 2

Unit 7 Review (Non-Calculator)

Constructions and Loci

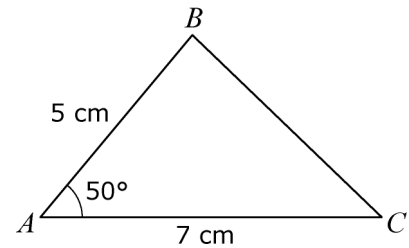
How well did you do:

Constructions and Loci	Score = $\frac{\quad}{41}$	
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<i>Topics/skills which need to be revisited:</i>	<i>Questions from the Review</i>	<i>Further practice from Delta 2</i>
- Construct an accurate drawing of a triangle - Construct a right angle triangle	1 6	- P163 Q2,3,4 - P165 Q11
Construct a net of a shape	2	P164 Q4
Construct a perpendicular from a point	4	P165 Q9
Construct an angle bisector	3	P165 Q7
- Constructing a locus - Locus in 3D - Solving problems with loci	5 7 8 9	- P166 Q1-6 - P170 Q15

Remember: for ALL questions, do NOT rub out your construction lines.

- 1. a** Using a **ruler**, **compasses** and **protractor**, construct an accurate drawing of triangle ABC , shown below.



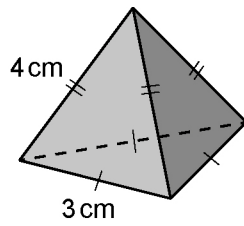
[3]

- b** Measure the length BC , to 1 d.p.

.....cm
[1]

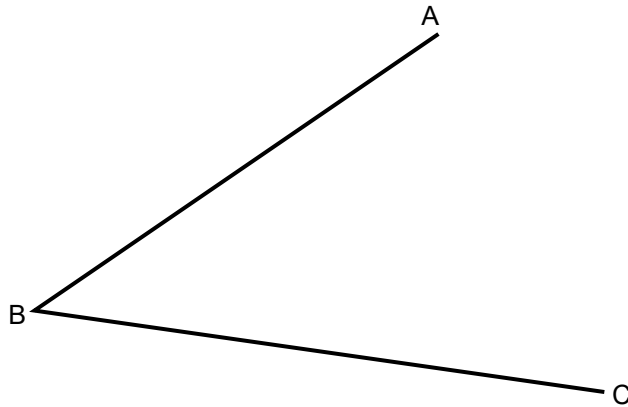
(Total 4 marks)

2. Construct the net of this triangular pyramid using a **ruler** and **compasses**. It has an equilateral triangle base of side 3 cm and isosceles triangle faces of 4 cm, 4 cm and 3 cm.



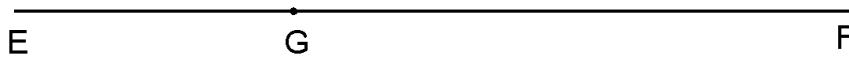
(Total 6 marks)

3. Construct the angle bisector of $\hat{ABC}$, using **ruler** and **compasses**.



(Total 3 marks)

4. Using the line EF, construct the perpendicular **from** G, using **ruler** and **compasses**.



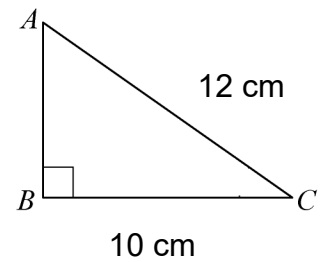
(Total 3 marks)

5. Katie and Larry are standing in a field, at points K and L. Draw the locus of all points which are equidistant from both Katie and Larry. Use **ruler** and **compasses**.



(Total 3 marks)

6. Use **ruler** and **compasses** to construct the triangle ABC.
Note: you have to construct the right angle using ruler and compasses, not a protractor.



(Total 4 marks)

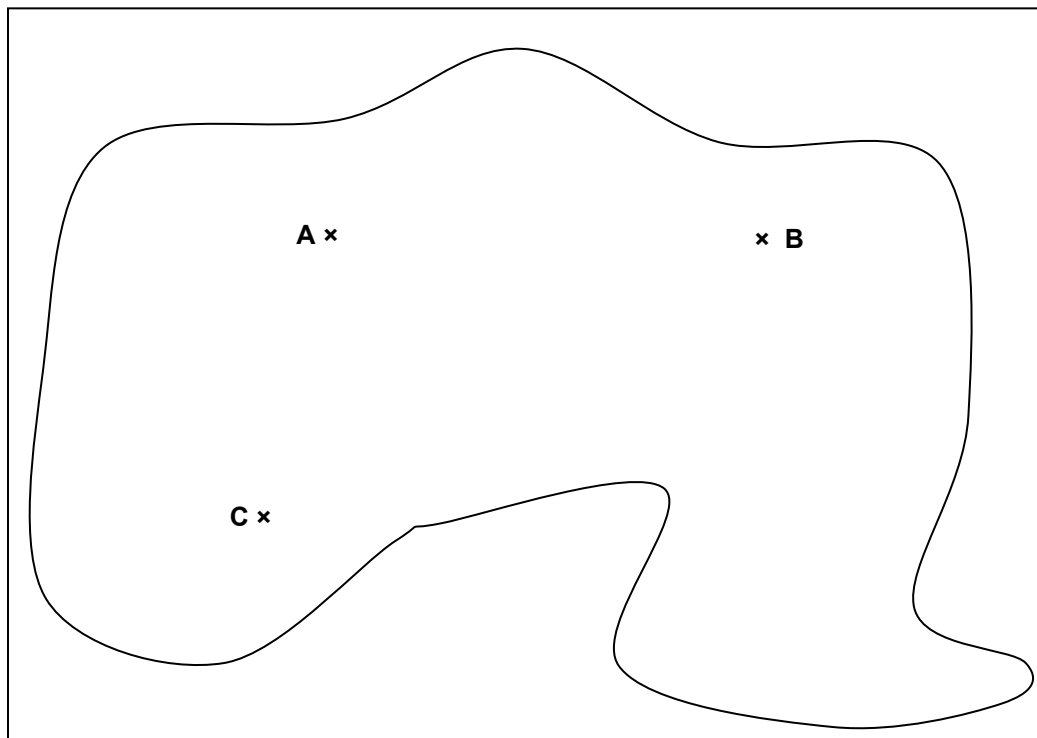
7. Scrat is stuck in space. However, he has a radio transmitter on his spacesuit which can transmit strong signals up to a distance of 80km from the transmitter.

What shape is the region with a strong signal?



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(Total 1 mark)

8. The diagram shows a sketch of a map of an island.



Treasure is hidden on the island.

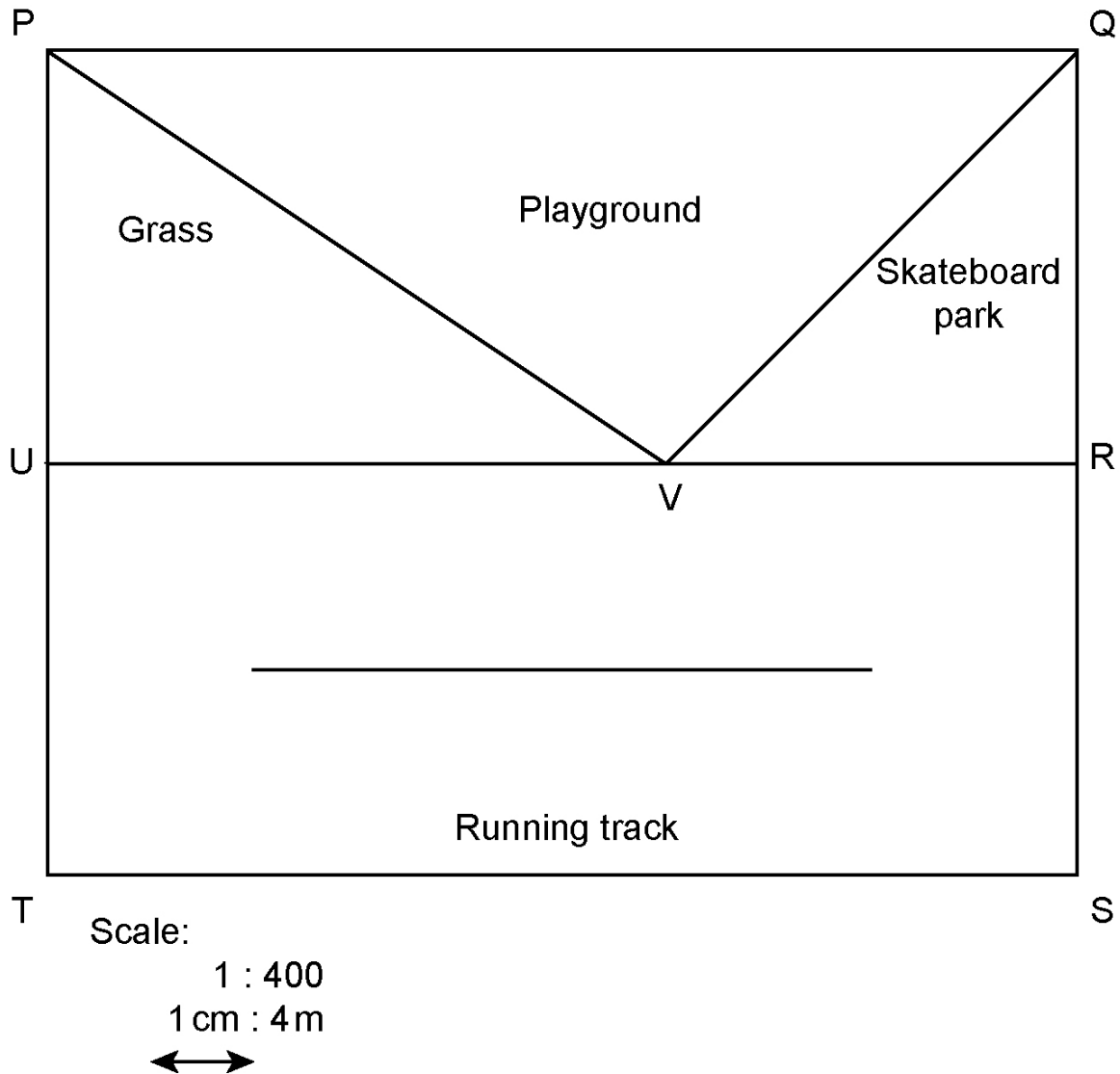
The treasure is hidden

- (i) nearer to A than to B ,
- and (ii) nearer to the line AC than to the line AB .

On the map shade the region in which the treasure is hidden.

(Total 5 marks)

9. Here is a plan of a children's play area.



- a The slide, which is to be in the playground area, is planned to be nearer to P than to V.
On the plan, construct the perpendicular bisector of P and V and shade the region where the slide will be.
- b The longest ride in the skateboard park is equidistant from the lines QV and RV.
Construct this locus on the plan.
- c A splashpool for the under-fives is planned in the grass area. The splashpool will lie within 8 m from the point marked U.
Draw and shade the splashpool on the plan.
- d The lower area is to have a running track. The outer edge of this track is to be 4 m from the given line.
Construct the running track.

(Total 12 marks)

[End of Review]

If you've finished, and checked your work, try this challenge.

YOU WILL **NOT** BE MARKED ON THIS SECTION

Investigation

A field is 20 m square.

Four goats are tethered to the four corners of the field.

The ropes are all the same length, and the goats must not be able to reach each other.

1 Draw a plan of the field using a scale of 1 cm to 2 m.

2 a Draw the maximum area that the goats can graze.

b Work out this area.

Now the goats are tethered to the midpoint of each side of the field.

Again, all the ropes are the same length and the goats cannot reach each other.

3 a Draw the maximum area that the goats can graze now.

b Work out this area.

4 Which area is larger?

Problem-solving

