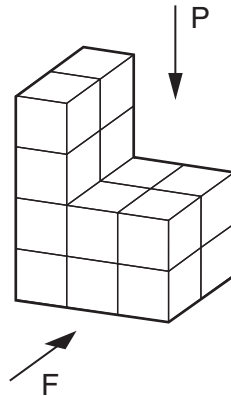
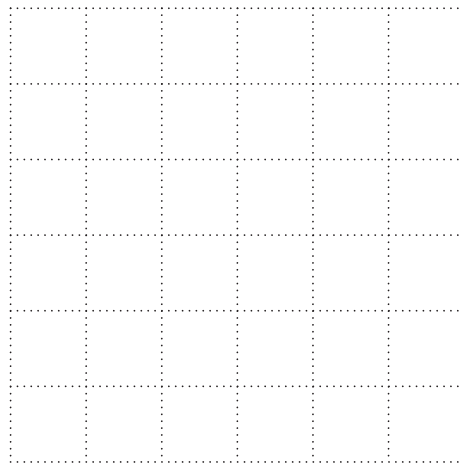


1 Toni makes this solid prism using one-centimetre cubes.

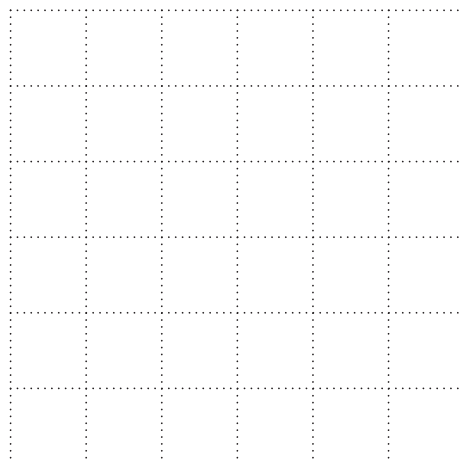


(a) (i) Draw the plan (view from P) of this solid shape.



[1]

(ii) Draw the front elevation (view from F) of this solid shape.



[1]

(b) Toni had a box containing 100 one-centimetre cubes.

How many cubes did she have left after making the solid prism?

(b) [2]

- 2 Use a pair of compasses and a ruler to answer this question.
Do not rub out your construction lines.

A park is a quadrilateral ABCD.
AD = 375 m and CD = 250 m.

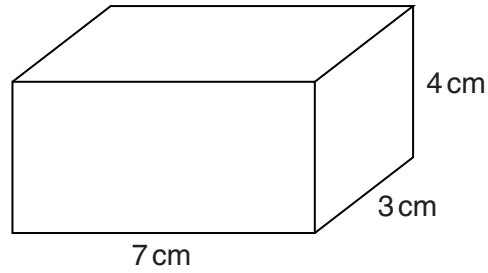
Scale: 1 cm represents 50 m



- (a) Complete the scale drawing of the park. [2]
- (b) There is a gate at B.
A straight path from B is the same distance from BC as from BA.
It continues across the park to a gate at E on side AD.
- (i) Construct the path on the scale diagram and mark the position of E. [2]
- (ii) How long is the path BE in the actual park?

(b)(ii) _____ m [2]

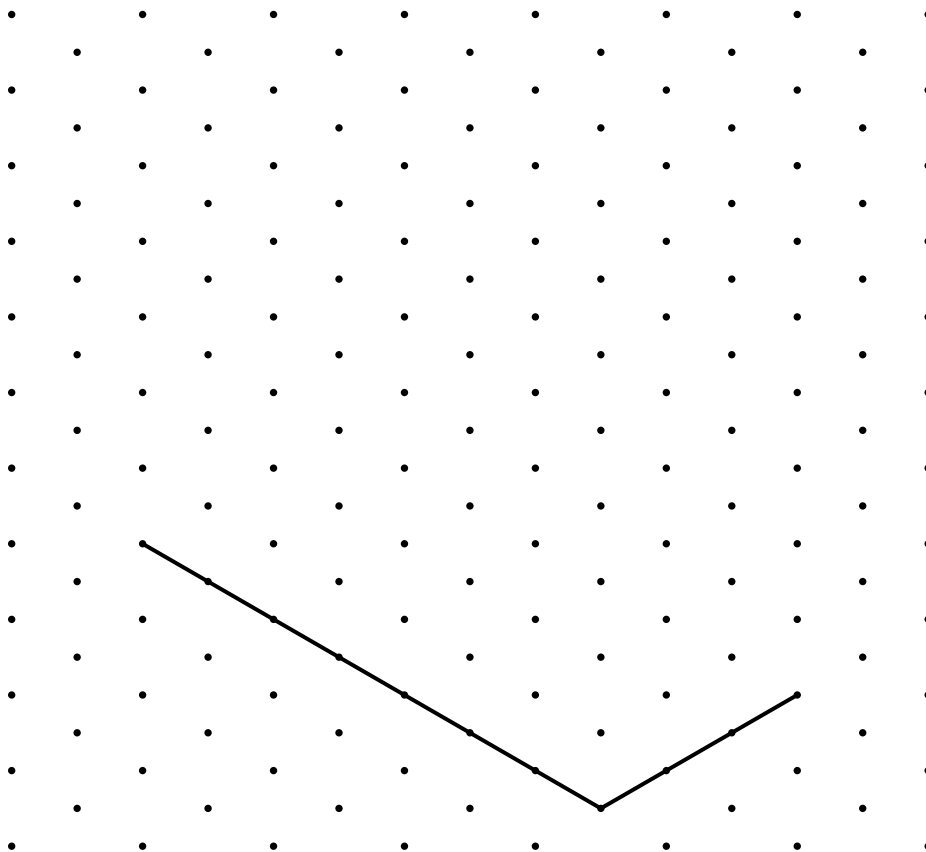
3 Here is a cuboid.



(a) Calculate the volume of the cuboid.

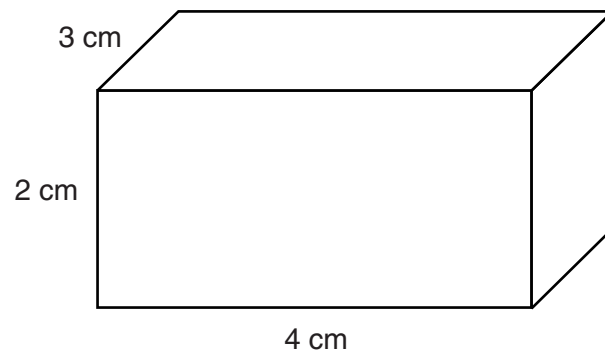
(a) _____ cm^3 [2]

(b) On the grid below, make an accurate isometric drawing of the cuboid. Two of the edges have already been drawn.



[3]

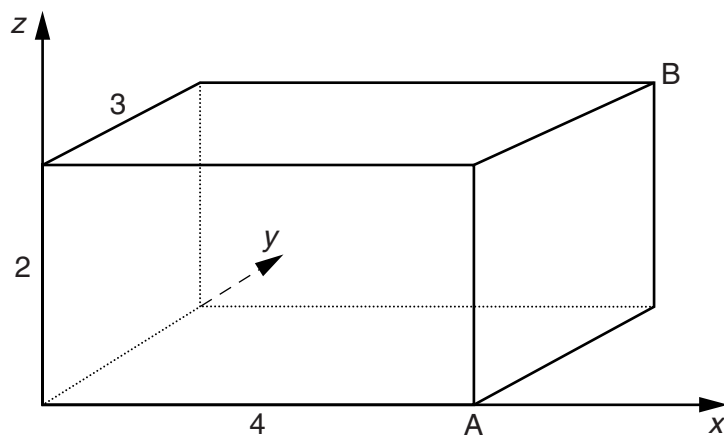
- 4 A cuboid measures 2 cm by 3 cm by 4 cm.



- (a) On the centimetre square grid below, draw accurately a net of the cuboid.



The cuboid is drawn on 3D axes using a 1 cm scale.



(b) Write down the coordinates of A and B.

(b) A (_____, _____, _____)

B (_____, _____, _____) [2]

- 5 Use a pair of compasses and a ruler to answer this question.
Do not rub out your construction lines.

The scale drawing shows two schools, Ashton (A) and Bedward (B).

Scale: 2 cm represents 1 mile

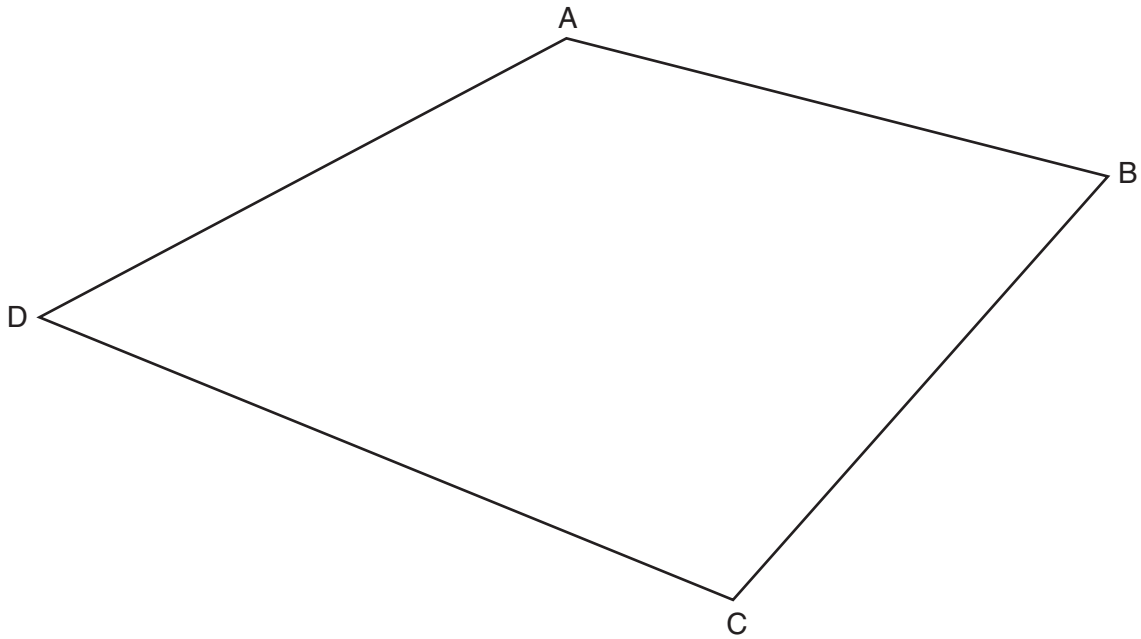
A •

• B

Students who go to Ashton School live 3 miles or less from the school.

Construct and shade the area where students can live who go to Ashton School even though they live nearer to Bedward School. **[5]**

6



- (a) Using a ruler and a pair of compasses, construct the perpendicular bisector of AB and the perpendicular bisector of BC. Label P, the point where these perpendicular bisectors cross. [3]

- (b) Sumita says that P is the same distance from all the corners of the quadrilateral.

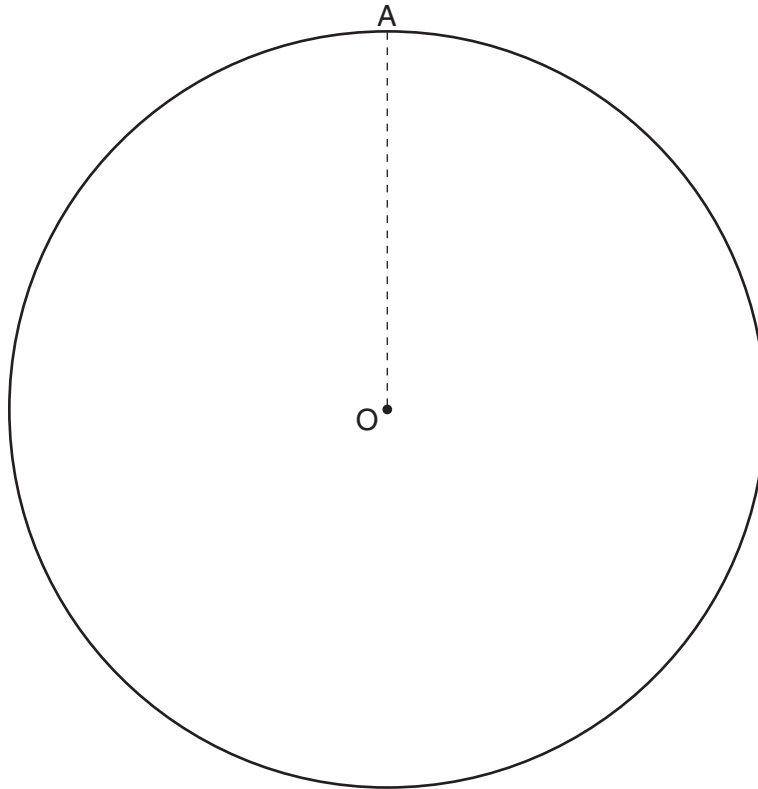
Is she correct?

_____ because _____

_____ [1]

- 7 Petra is designing a small mat to put a glass on. She decides to make the mat a **regular** hexagon. All the corners should lie on the circle, centre O. One of the corners should be at point A.

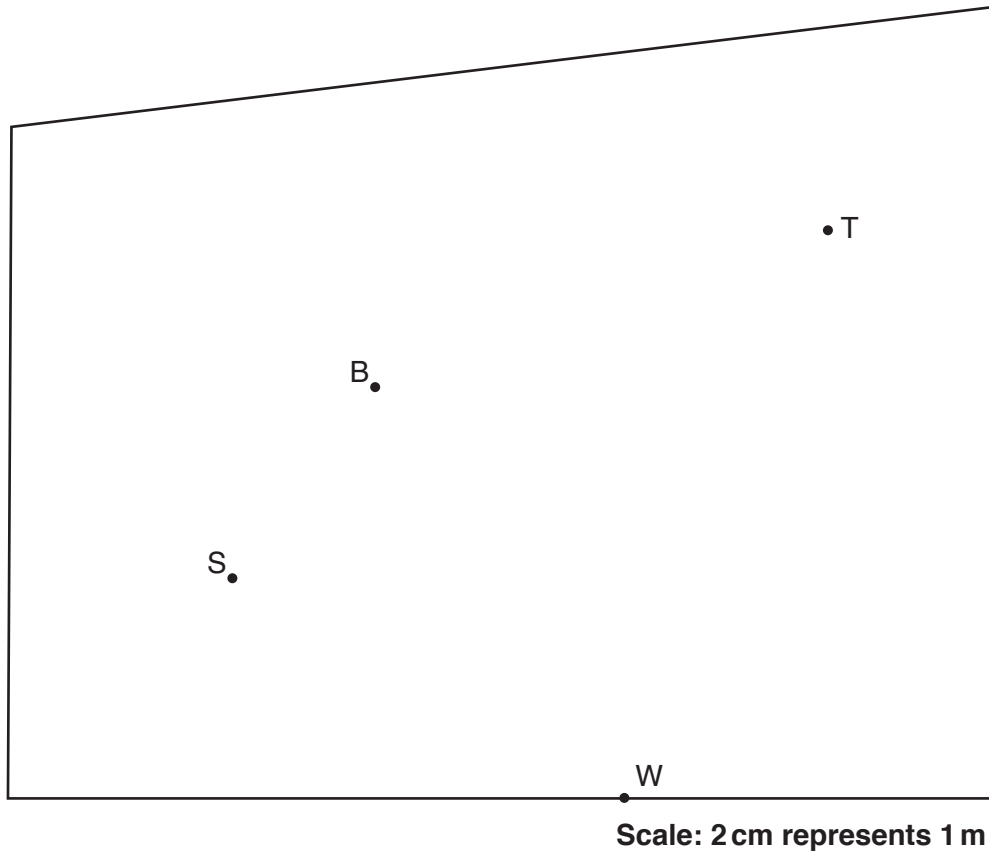
Construct the hexagon.



[3]

- 8 *In this question, use a ruler and a pair of compasses.
Do not rub out your construction lines.*

This scale drawing shows Colin's garden.



Colin wants to put a bird feeder in his garden.
He wants it to be

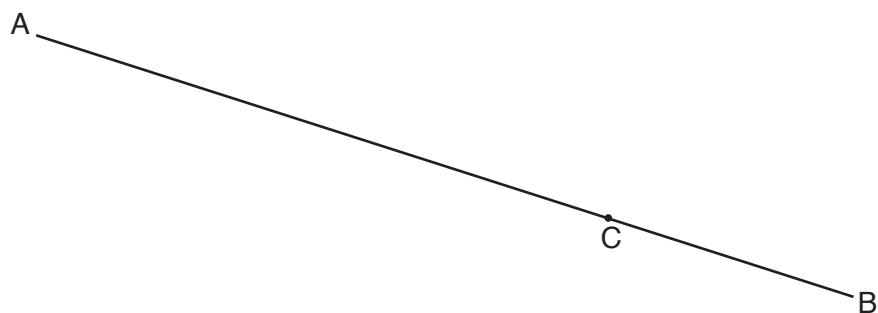
- up to 3 m from the tree T
- up to 2 m from the bush B
- nearer to the water tap W than to the seat S.

Construct the region where Colin can put the bird feeder.
Label the region R.

[5]

- 9 *In this question, use a ruler and a pair of compasses.
Do not rub out your construction lines.*

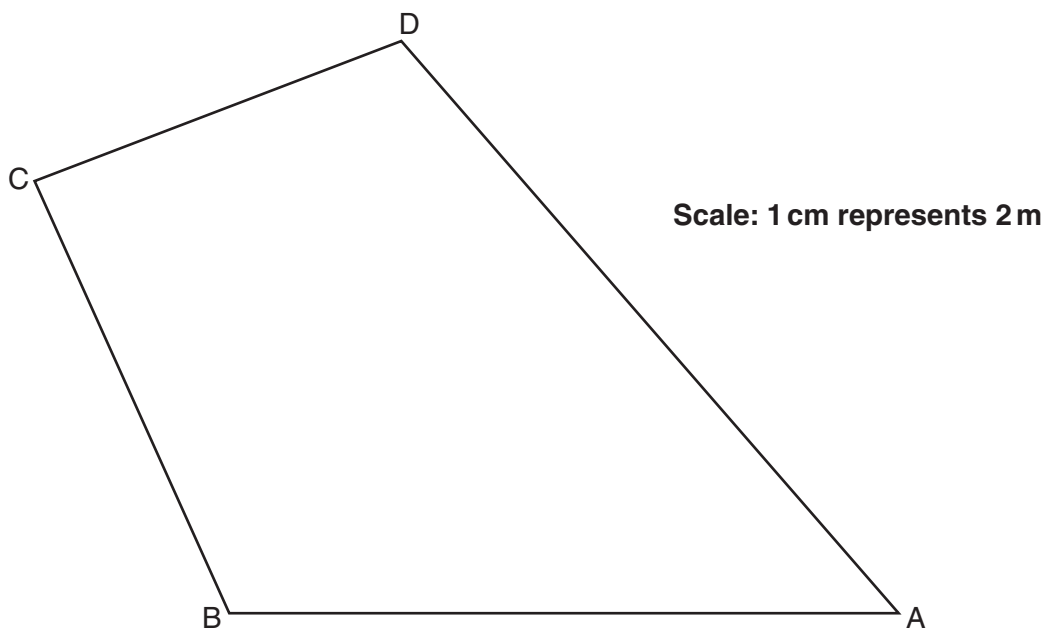
Construct the perpendicular to AB which passes through point C.



[2]

- 10 In this question, use a ruler and a pair of compasses.
Leave in your construction lines.

The scale drawing ABCD shows Sam's garden.
BA is the wall of Sam's house.



Sam wants to put a pond in his garden.
He wants it to be:

- nearer to B than A
- more than 8 metres from D.

Construct and shade the region where the pond can be.

[4]

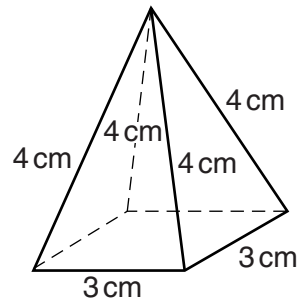
- 11 Point A has coordinates $(-1, 1)$.
Point B has coordinates $(10, 7)$.

Calculate the coordinates of the midpoint of AB.

(_____ , _____) [2]

- 12 In this question, use a ruler and a pair of compasses.
Leave in your construction lines.

The diagram shows a square-based pyramid.



On the grid below, construct a net of the pyramid.

