




COUNTDOWN TO YOUR FINAL MATHS EXAM ...

PART 11 (2018)

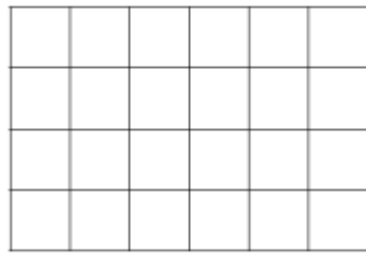


	Marks	Actual	  
Q1. Plans & elevations (Clip 54)	2		
Q2. Pythagoras and Circles (Clips 39/40/56/57)	6		
Q3. Constructions (Clip 55)	2		
Q4. Plans & elevations (Clip 54)	2		
Q5. Circles (Clips 56 & 57)	2		
Q6. Pythagoras and Circles (Clips 39/40/56/57)	4		
Q7. Pythagoras and Circles (Clips 39/40/56/57)	7		
Q8. Circles (Clips 56 & 57)	4		
Q9. Constructions (Clip 55)	3		
Q10. Constructions (Clip 55)	2		
Q11. Circles (Clips 56 & 57)	3		
Q12. Circles & Constructions (Clips 55, 56 & 57)	3		
Q13. Circles (Clips 56 & 57)	5		
Q14. Circles (Clips 56 & 57)	4		
Q15. Circles (Clips 56 & 57)	4		
Q16. Plans & elevations / constructions (Clip 54/55)	5		
Q17. Plans & elevations (Clip 54)	2		
Q18. Constructions (Clip 55)	3		

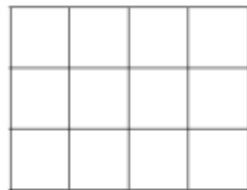
63

Questions

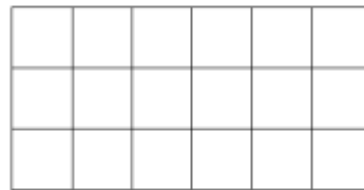
Q1. A solid cuboid is made from centimetre cubes. The plan view, front elevation and side elevation are shown.



Plan view



Front elevation



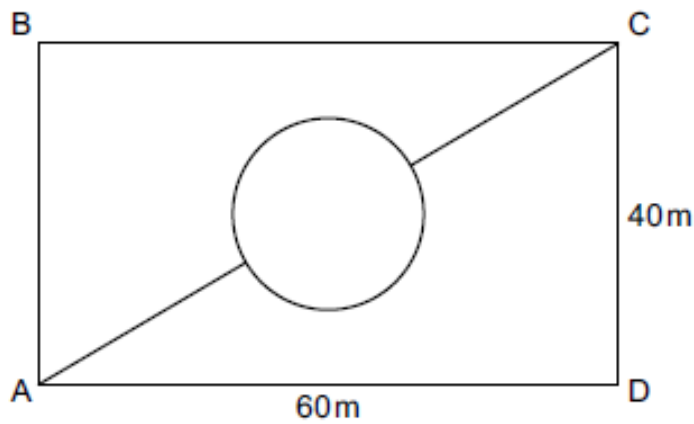
Side elevation



How many centimetre cubes were used to make the cuboid?

(2)

Q2. The rectangle ABCD represents a park.



Not to scale

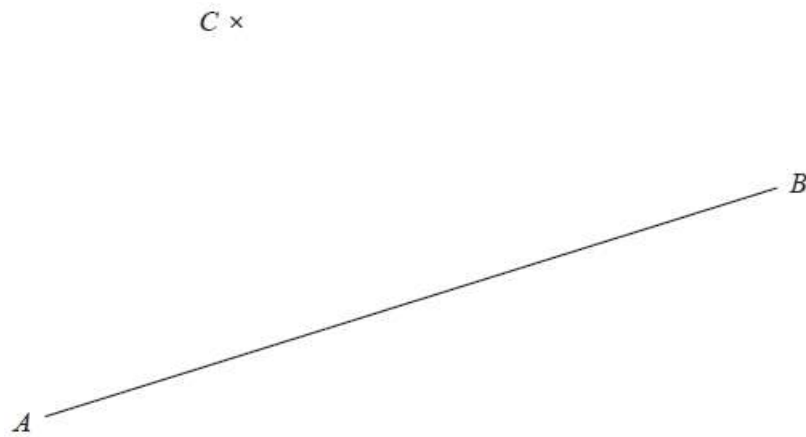
The lines show all the paths in the park.

The circular path is in the centre of the rectangle and has a diameter of 10m.

Calculate the shortest distance from A to C across the park, using only the paths shown.

..... m [6]

Q3. Use ruler and compasses to **construct** the perpendicular from point C to the line AB . You must show all your construction lines.



(2)

Q4. Here is a solid prism.

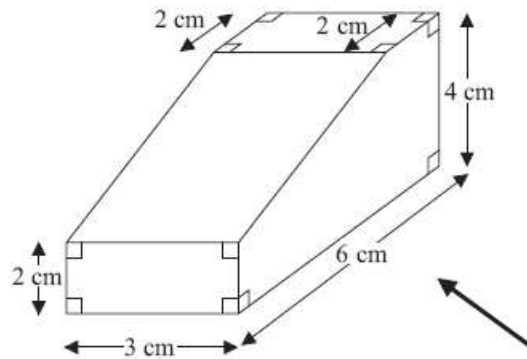
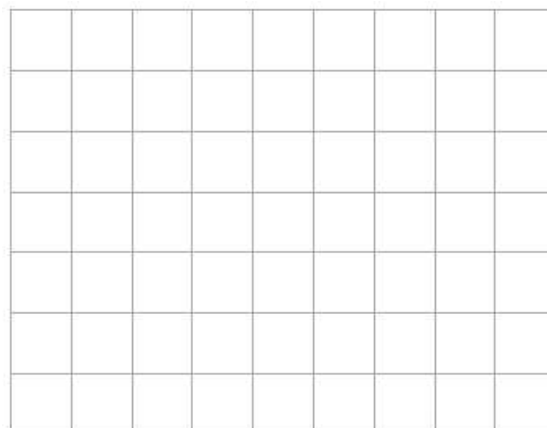


Diagram **NOT** accurately drawn

On the grid, draw an accurate side elevation of the solid prism from the direction of the arrow.



(2)

Q5. Here is a circle.

The radius of the circle is 4 cm.

Work out the circumference of the circle.

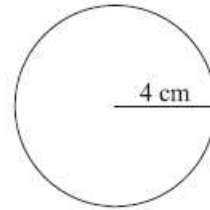


Diagram **NOT** accurately drawn

(2)

Q6. ABC is a right-angled triangle.

A , B and C are points on the circumference of a circle centre O .

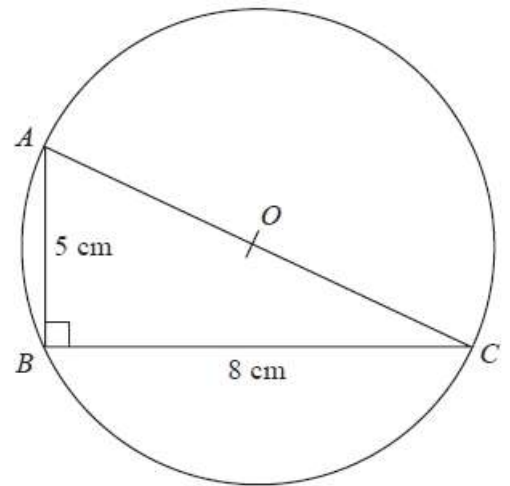
$AB = 5$ cm

$BC = 8$ cm

AOC is a diameter of the circle.

Calculate the circumference of the circle.

Give your answer correct to 3 significant figures.

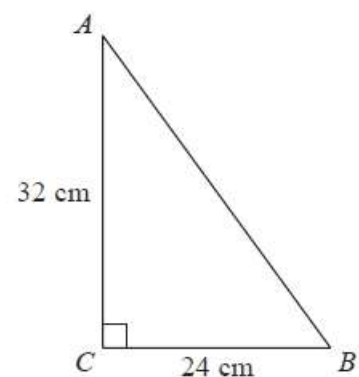


(4)

Q7. Here is a right-angled triangle.

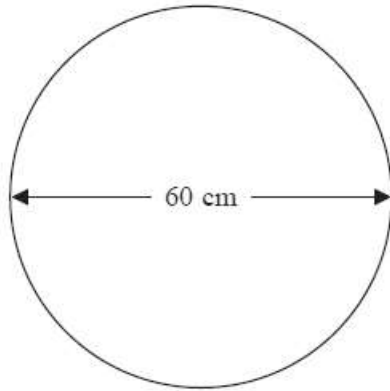
Diagram **NOT** accurately drawn

(a) Work out the length of AB .

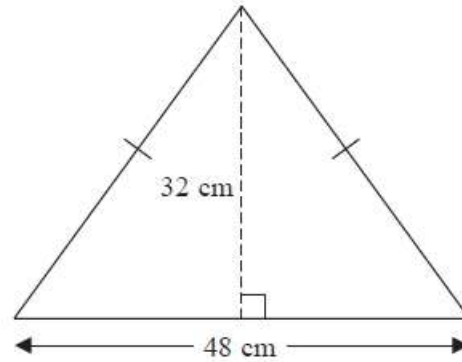


(3)

Inderpal is making two mirrors.



Mirror A



Mirror B

Diagram **NOT** accurately drawn

Mirror **A** is in the shape of a circle.
This mirror has a diameter of 60 cm.

Mirror **B** is in the shape of an isosceles triangle.
This mirror has base 48 cm and height 32 cm.

Inderpal buys metal strips to put around the edge of each mirror.
The metal strip is sold in lengths of one metre.
Each one metre length of metal strip costs £5.68

(b) Work out the total amount Inderpal pays.
You must show all your working.

(4)

Q8. The diagram shows the top of Levi's birthday cake.

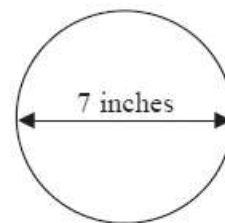


Diagram **NOT** accurately drawn

The top of the cake is in the shape of a circle.
The diameter of the circle is 7 inches.

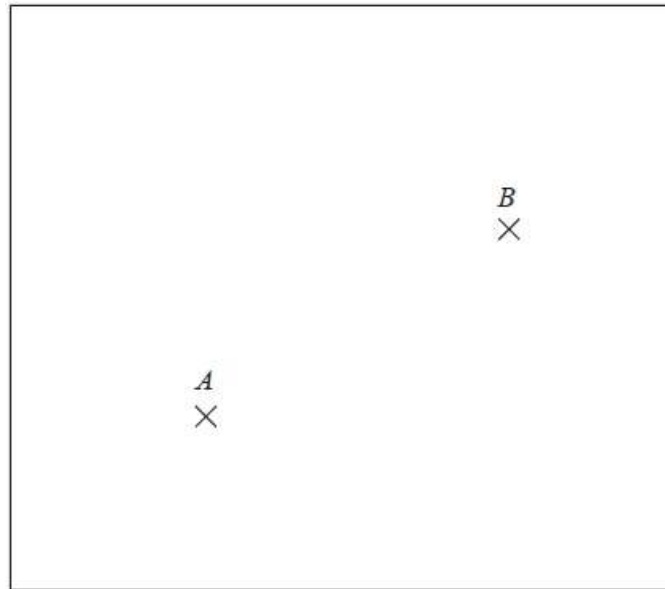
A ribbon is going to be put around the side of the cake.
Ribbons are sold in 50 cm lengths.

1 inch is 2.54 cm.

Work out if one length of ribbon is long enough to go all the way around the cake.
You must show your working.

(4)

Q9. The diagram shows the positions of two shops, A and B , on a map.



The scale of the map is 1 cm represents 5 km.

Yannis wants to build a warehouse.

The warehouse needs to be

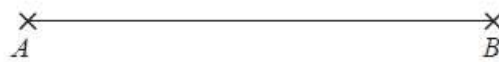
- less than 10 km from A ,
- less than 20 km from B .

Show by shading where Yannis can build the warehouse.



(3)

Q10.



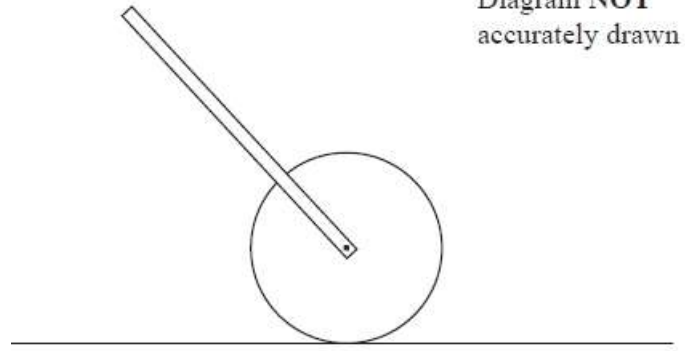
Use ruler and compasses to **construct** the perpendicular bisector of the line AB .
You must show all your construction lines.

(2)

Q11. The diagram shows a trundle wheel.

Diagram NOT
accurately drawn

Trundle wheels are used to measure distances along the ground.



The radius of the trundle wheel is 20 cm.

Jim wants to work out the distance between two junctions on a road.
He rolls the trundle wheel between the two junctions.

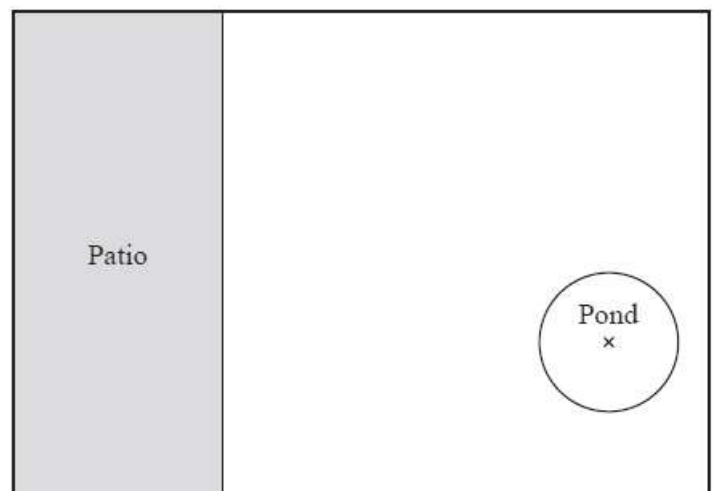
The trundle wheel rotates exactly 34 times.

Work out the distance between the two junctions.
Give your answer in metres correct to the nearest metre.

(3)

Q12. The diagram shows a garden in the shape of a rectangle.

The scale of the diagram is 1 cm represents 2 m.



Scale: 1 cm represents 2 m

Irfan is going to plant a tree in the garden.
The tree must be

- more than 3 metres from the patio
- and** more than 6 metres from the centre of the pond.

On the diagram, shade the region where Irfan can plant the tree.



(3)

Q13. The diagram shows a plan of Brian's lawn.

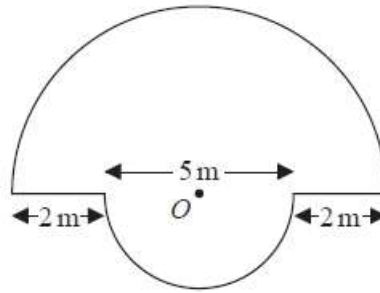


Diagram **NOT** accurately drawn

The edge of the lawn consists of two semicircles and two straight lines.
Each semicircle has centre O .
The diameters of the semicircles are 9 m and 5 m.

Brian is going to put lawn edging around the edge of the lawn.
Lawn edging is sold in 2.4 metre rolls.

Lawn edging

£3.99 per roll

or

3 rolls for £10

Brian has £35

Has Brian got enough money to buy all the rolls of lawn edging he needs?
You must show all your working.

(5)

Q14. The diagram shows a semicircle drawn inside a rectangle.

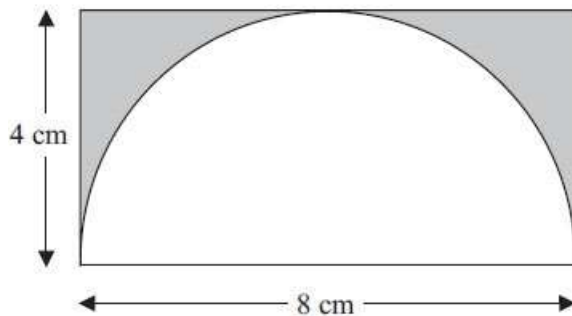


Diagram **NOT** accurately drawn

The semicircle has a diameter of 8 cm.

The rectangle is 8 cm by 4 cm.

Work out the area of the shaded region. Give your answer correct to 3 significant figures.

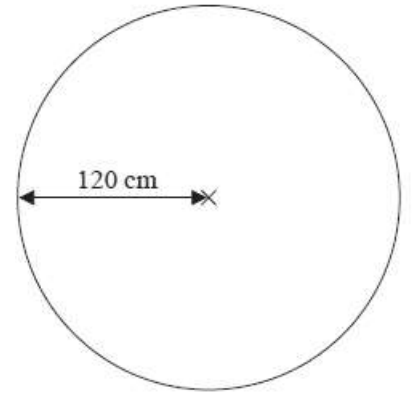
(4)

Q15. The diagram shows the surface of a pond in the shape of a circle.

The circle has a radius of 120 cm.

Mark wants to put 20 fish into the pond.
There needs to be a surface area of 1800 cm^2 for each fish.

Show that the surface of the pond is large enough for Mark to put 20 fish into the pond.



Q16. Here is a pyramid with a square base. The sloping faces are identical isosceles triangles.

(4)

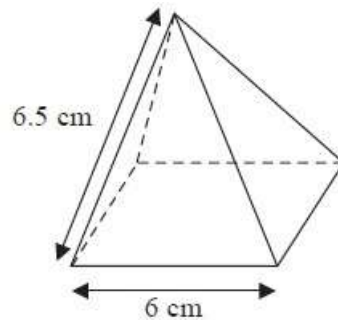
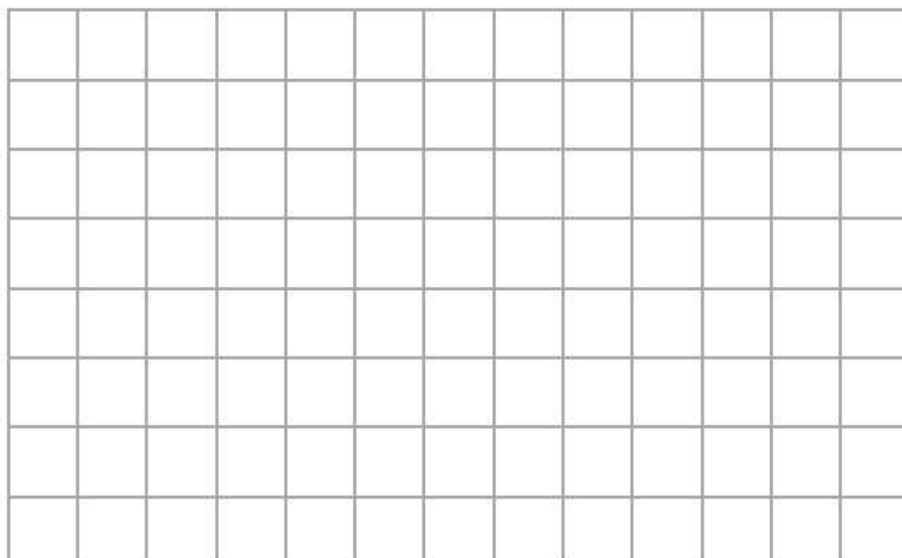


Diagram NOT accurately drawn



(a) Draw a full size accurate plan of the pyramid on the centimetre square grid.



(2)

(b) Using a ruler and compasses, construct an accurate drawing of one of the triangular sloping faces of the pyramid.

Q17. The diagram shows a solid prism.

(3)

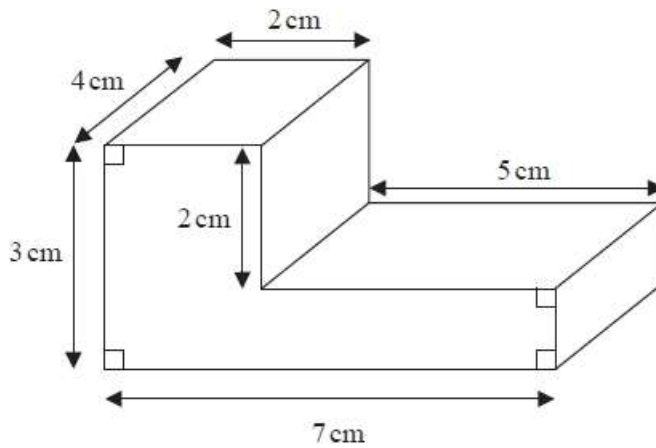
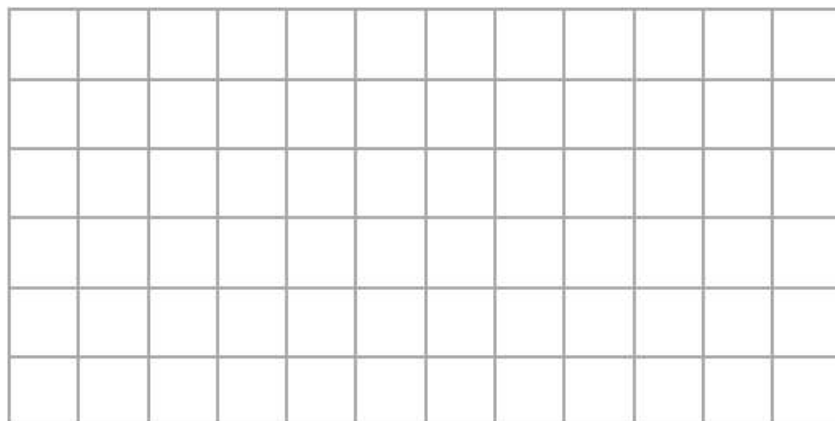


Diagram NOT accurately drawn



On the grid, draw an accurate plan of the solid prism.



(2)

Q18. (a) Draw an angle of 40° at the point P .



(1)

(b) Construct an equilateral triangle with sides of length 6cm.



(2)