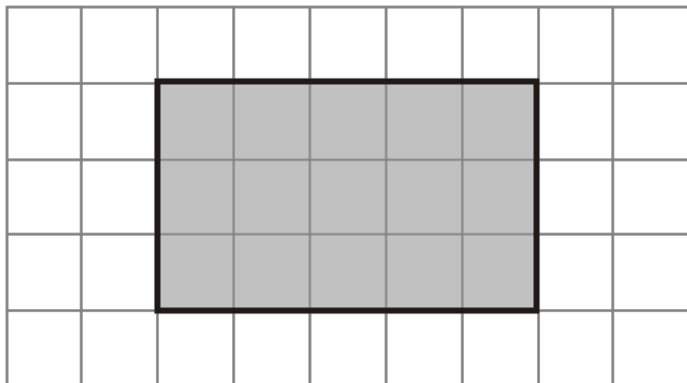


Q1. Here is a shaded shape on a grid of centimetre squares.



(a) Find the perimeter of the shaded shape.

..... cm

(1)

(b) Find the area of the shaded shape.

..... cm²

(1)

(c) Write down the mathematical name of the shaded shape.

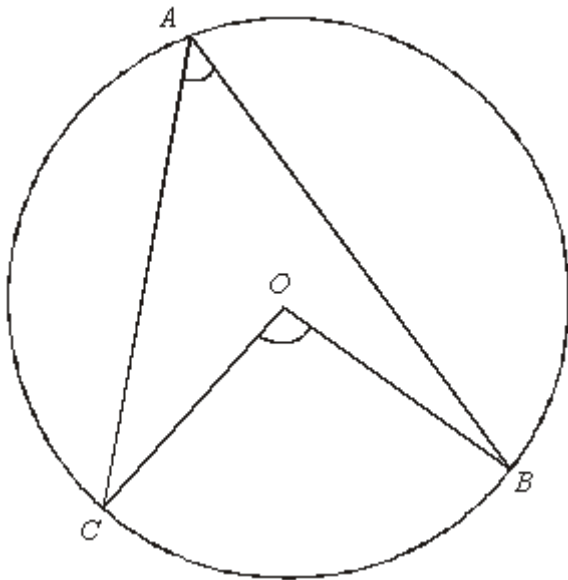
.....

(1)

(Total 3 marks)

Q2.

Diagram **NOT**
accurately drawn

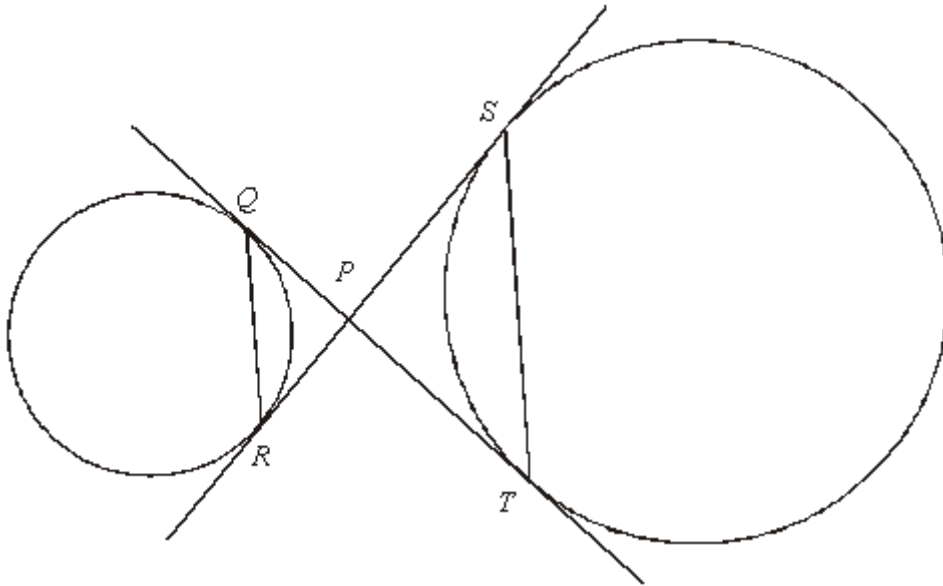


A , B and C are points on the circle with centre O .

Prove that the angle subtended by arc BC at the centre of the circle is twice the angle subtended by arc BC at point A .

(Total 4 marks)

Q3.



Q and R are two points on the circumference of a circle.
 S and T are two points on the circumference of another circle.

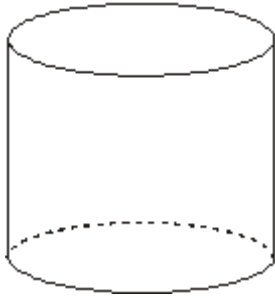
QT and SR are tangents to both circles.
 P is the point of intersection of the two tangents.

Prove that QR is parallel to ST .

(Total 5 marks)

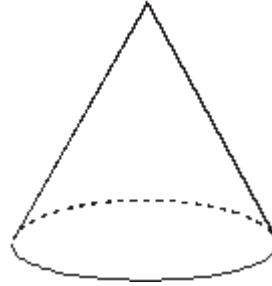
Q4. Write down the mathematical name of each of these two 3-D shapes.

(i)



(i)

(ii)



(ii)

(Total 2 marks)

M1.

	Answer	Mark	Additional Guidance
(a)	16	1	B1 for 16 cao
(b)	15	1	B1 for 15 cao
(c)	rectangle	1	B1 for rectangle, quadrilateral, trapezium, parallelogram or oblong
Total for Question: 3 marks			

M2.

	Working	Answer	Mark	Additional Guidance
QWC (i, ii, iii)	<p>Join AO and produce to P</p> <p>Mark equal angles in isosceles triangle AOC or AOB</p> <p>Mark angle COP as twice angle CAO or mark angle BOP as twice angle BAO</p> <p>Identify angle A as half angle BOC</p>		4	<p>M1 for Joining AO and producing to "P"</p> <p>M1 for marking equal angles in isosceles triangle AOC or AOB giving reason that triangles are isosceles because radii are equal</p> <p>M1 for marking angle COP as twice angle CAO or marking Angle BOP as twice angle BAO giving reason that exterior angle of a triangle is equal to the interior and opposite angles o.e. QWC: Working should be logical and sequential in structure; following on from labelling the extended line</p> <p>A1 for Identifying angle A as half angle BOC if M3 awarded QWC: All labelling and angle notation should be consistent</p>
Total for Question: 4 marks				

M3.

	Working	Answer	Mark	Additional Guidance
QW C (i, ii, iii)	PS = PT and PQ = PR (equal tgts from a point) Let angle SPT = x	Proof	5	B1 for PS = PT or PQ = PR B1 for equal tangents from a point

Total for Question: 5 marks

M4.

	Answer	Mark	Additional Guidance
(i)	Cylinder	2	B1 cao
(ii)	Cone		B1 cao
			Total for Question: 2 marks

E1. A well understood question by most candidates; however a significant minority mixed up area and perimeter and some candidates found the area and perimeter of the grid on which the shaded shape was drawn. Almost all candidates wrote rectangle for the shape though some candidates did write quadrilateral, square or even kite.

E4. There were many correct answers although some gave quite imaginative answers such as 'rollergram' in (i). 'Pyramid' was a popular incorrect response in (ii).