

Date 11.10.2019

IG - Maths

0580

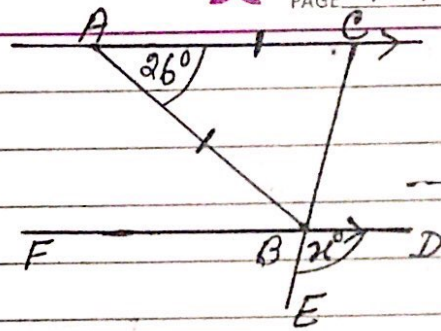
Geometry

Exercise: Paper - 4

SP-20; M-19; M-18; S-19, S-18,
W-18.

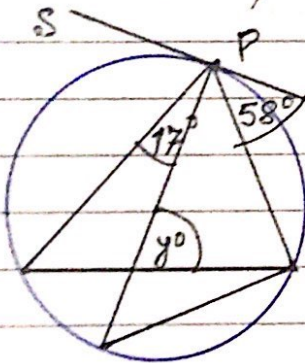
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1(a) AC is parallel to FBD, ABC is an isosceles triangle and CBE is a straight line. Find the value of x .



--- [3]

(b)



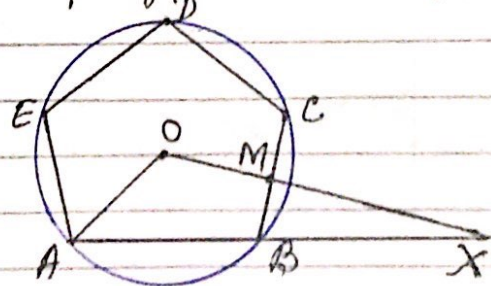
The diagram shows a circle with diameter PA. ST is a tangent to the circle at P. Find the value of y . --- [5]

[S-19/42/Q2]

2(a) Show that each interior angle of a regular pentagon is 108° . --- [2]

(b) The diagram shows a regular pentagon ABCDE.

The vertices of the pentagon lie on a circle, centre O, radius 12 cm. M is the midpoint of BC.



(i) Find BM

--- [3]

(ii) OMX and ABX are straight lines.

(a) Find BX.

--- [5]

(b) Calculate the area of triangle AOX.

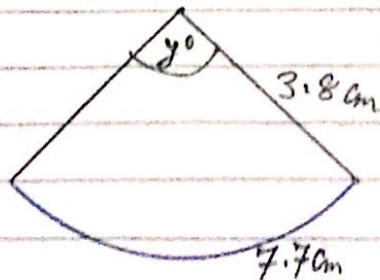
[S-19/42/Q7] --- [3]

3. The diagram shows a sector of a circle of radius 3.8 cm.

The arc length is 7.7 cm.

(i) Calculate the value of y .

(ii) Calculate the area of the sector.



--- [2]

--- [2]

[S-19/42/Q8(b)]

Q4(a) The exterior angle of a regular polygon is x° and the interior angle is 82° . Calculate the number of sides of the polygon. --- [3]

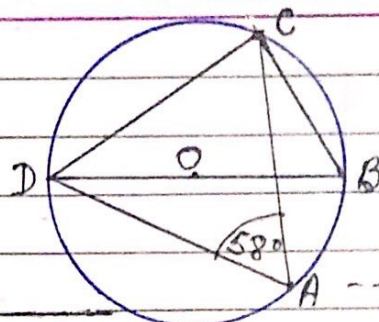
[S-18/41/Q8(a)]

(continued ->)



(Continued →)

4(b) A, B, C and D are points on the circumference of the circle, centre O.
DOB is a straight line and
angle DAC = 58°
Find angle CDB.



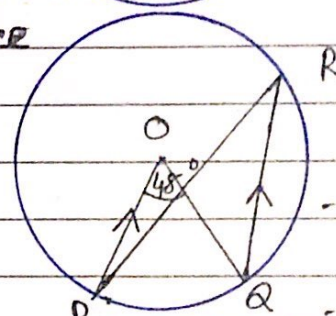
--- [3]

(c) P, Q and R are points on the circumference of the circle, centre O.

PQ is parallel to QR and angle POQ = 48°

(i) Find angle OPR.

(ii) The radius of the circle is 5.4 cm.
Calculate the length of major arc PR.

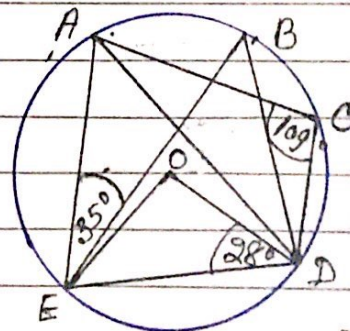


--- [2]

--- [3]

5-18/41/Q8

5 (a) A, B, C, D and E lie on the circle, centre O.
Angle AEB = 35°, angle ODE = 28° and
angle ACD = 109°.



(i) Work out the following angles, giving reasons for your answers.

(a) Angle EBD = --- because ---

(b) Angle EAD = --- because ---

(ii) Work out angle BEO.

(b) In a regular polygon, the interior angle is 11 times the exterior angle.

(i) Work out the number of sides of this polygon.

(ii) Find the sum of the interior angles of this polygon.

5-18/42/Q9

6 In the diagram, A, B, C and D lie on the circle, centre O.

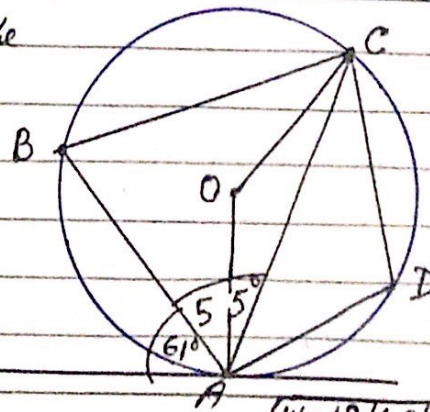
EA is a tangent to the circle at A.
Angle EAB = 61° and angle BAC = 55°

(a) Find angle BAO --- [1]

(b) Find angle AOC. --- [2]

(c) Find angle ABC. --- [1]

(d) Find angle CDA --- [1]



11-18/42/Q7



7 (a) In the diagram AB and CD are parallel. AD and BC intersect at right angle at the point X

AB = 10cm, CD = 5cm, AX = 8cm and BX = 6cm.

(i) Use similar triangles to calculate DX.

(ii) Calculate angle XAB.

(b) P, Q, R, S and T lie on the circle, Centre O. Angle PST = 75° and Angle QTS = 85°

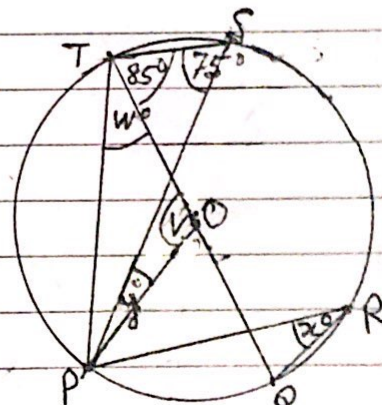
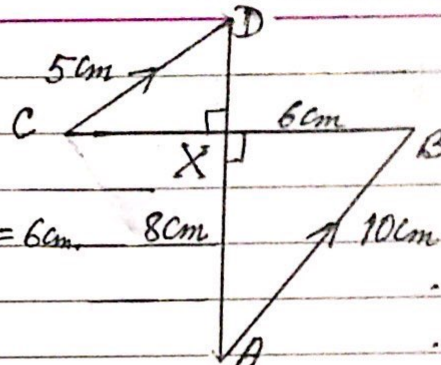
Find the values of v , w , x and y .

(c) Two containers are mathematically similar.

The surface area of the larger container is 226cm² and the surface area of the smaller container is 94cm².

The volume of the larger container is 680cm³.

Find the volume of the small container.



W-18/43/Q8



Answers

1 (a) 103 (b) 75

2 (a) $180^\circ - \frac{360}{5} = 108^\circ$

(b) (i) 7.05

(ii) (a) 22.8 (b) 179

3 (i) 116.1 (ii) 14.6

4 (a) 18 (b) 32

(c) (i) 24 (ii) 29.4

5(a)(i) 62 as angle at centre.

$\angle EOD = 180 - 2 \times 26 = 124$,

and the angle at the centre is double of the circumference.

(b) 62 as $\angle EAD = \angle EBD$ angles in the same segment of circle are equal.

(a)(ii) 8

(b) (i) 24 (ii) 3960

6 (a) 29 (b) 12.8

(c) 64 (d) 116

7(a) (i) 4 (ii) 36.9

(b) $v = 150$, $w = 10$

$x = 15$ $y = 10$

(c) 182

