



# MATHS

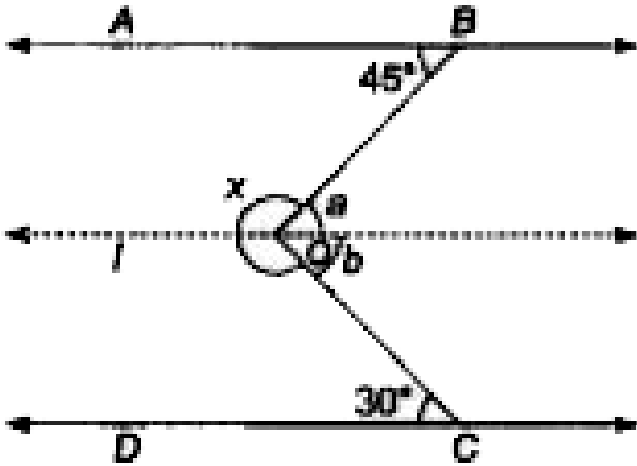
**BOOKS - ARIHANT PUBLICATION**

**JHARKHAND**

**GEOMETRY**

**Solved Examples**

1. In figure,  $AB \parallel CD$ , the value of  $x$  is



A.  $110^\circ$

B.  $120^\circ$

C.  $285^\circ$

D.  $190^\circ$

**Answer: C**



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2.  $ABCD$  is a parallelogram.  $P$  is a point on  $AD$  such that  $AP = \frac{1}{3}AD$  and  $Q$  is a point on  $BC$  such that  $CQ = \frac{1}{3}BP$ . Prove that  $AQCP$  is a parallelogram.

A. rectangle

B. square

C. parallelogram

D. rhombus

**Answer: C**

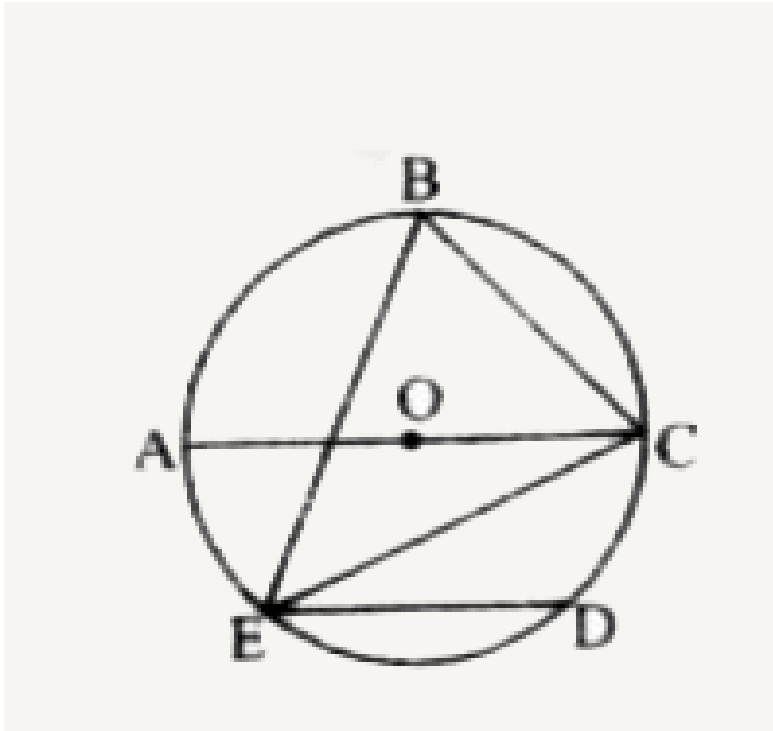


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**3.** In figure chord  $ED$  is parallel to the diameter.

$AC$  of the circle. If  $\angle CBE = 65^\circ$  then  $\angle DEC$

= ?



A.  $25^\circ$

B.  $30^\circ$

C.  $35^\circ$

D.  $75^\circ$

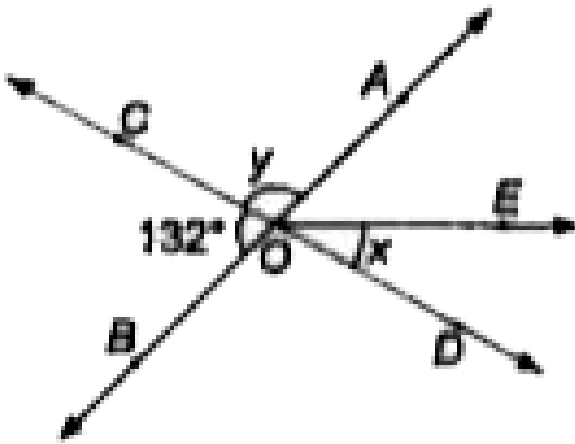
**Answer: A**



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**Exam Booster For Cracking Exam**

1. If  $OE$  is the bisector of  $\angle AOD$  in figure, then the values of  $x$  and  $y$  are respectively



A.  $30^\circ, 45^\circ$

B.  $66^\circ, 48^\circ$

C.  $45^\circ, 60^\circ$

D.  $25^\circ, 60^\circ$

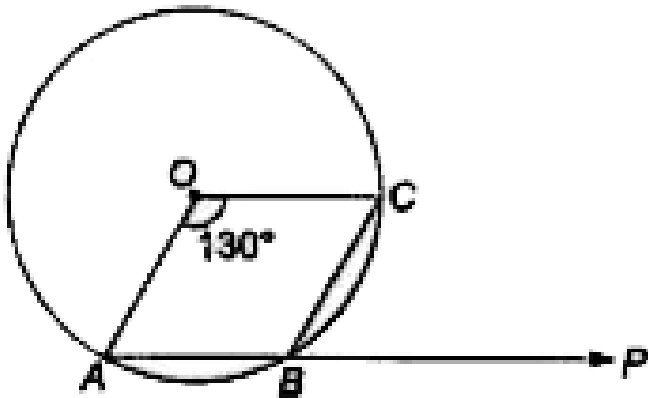
**Answer: B**



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2. In the given figure,  $O$  is the centre of a circle and arc  $ABC$  subtends an angle of  $130^\circ$  at  $O$ .

$AB$  is extended to  $P$ , Then,  $\angle PBC$  is equal to



A.  $25^\circ$

B.  $40^\circ$



C.  $65^\circ$

D.  $75^\circ$

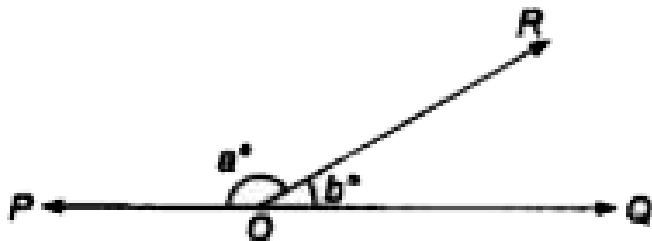
**Answer: C**



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**3.**  $\angle POR$  and  $\angle QOR$  form a linear pair. If  $a - b = 80^\circ$ , then the value of  $a$  and  $b$

respectively.



A.  $95^\circ, 85^\circ$

B.  $108^\circ, 72^\circ$

C.  $130^\circ, 50^\circ$

D.  $105^\circ, 75^\circ$

**Answer: C**



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4. An angle which measures more than  $180^\circ$  but less than  $360^\circ$ , is called

- A. a reflex angle
- B. a right angle
- C. an adjacent angle
- D. None of these

**Answer: A**



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5. The measure of an angle, if seven times its complement is  $10^\circ$  less than three times its supplement, is

A.  $30^\circ$

B.  $35^\circ$

C.  $25^\circ$

D.  $20^\circ$

**Answer: C**



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6. The point of intersection of the angle bisectors of a triangle is :

A. orthocentre

B. centroid

C. incentre

D. excentre

**Answer: C**



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7. In an equilateral triangle, the incentre, circumcentre, orthocentre and centroid are :

A. collinear

B. concyclic

C. coincide

D. None of these

**Answer: C**



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8. In an equilateral triangle ABC, the side BC is trisected at D. Then the correct relation is

A.  $9AD^2 = 7AB^2$

B.  $8AD^2 = 9AB^2$

C.  $7AD^2 = 9AB^2$

D. None of these

**Answer: A**



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9. The bisector of the angles of a parallelogram enclose a

A. rectangle

B. rhombus

C. square

D. trapezium

**Answer: A**



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10. One of the angles of a parallelogram is  $55^\circ$

. The remaining angles are respectively

A.  $105^\circ$ ,  $125^\circ$ ,  $55^\circ$

B.  $125^\circ$ ,  $55^\circ$ ,  $125^\circ$

C.  $125^\circ$ ,  $125^\circ$ ,  $55^\circ$

D.  $25^\circ$ ,  $135^\circ$ ,  $135^\circ$

**Answer: B**



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**11.** Two parallel lines AB and CD are intersected by a transversal line EF at M and N, respectively. If the lines MP and NP are the bisectors of the interior angles BMN and DNM on the same side of the transversal, then  $\angle MPN$  is equal to

A.  $180^\circ$

B.  $60^\circ$

C.  $90^\circ$

D. None of these

**Answer: C**



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**12.** The earth makes a complete rotation about its axis in 24h. What angles will it turn in 3h 20 min ?

A.  $50^\circ$

B.  $120^\circ$

C.  $130^\circ$

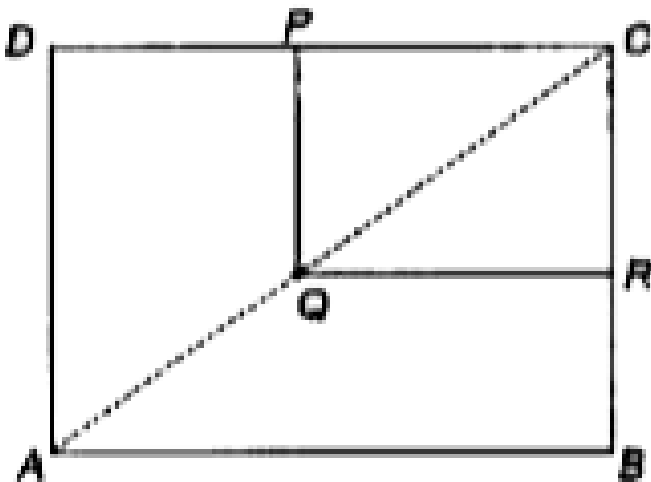
D. None of these

**Answer: A**



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**13.** In the given figure,  $ABCD$  and  $PQRC$  are rectangles, where  $Q$  is the mid-point of  $AC$ , then  $DP$  is equal to



A. PC

B. QA

C. AR

D. QC

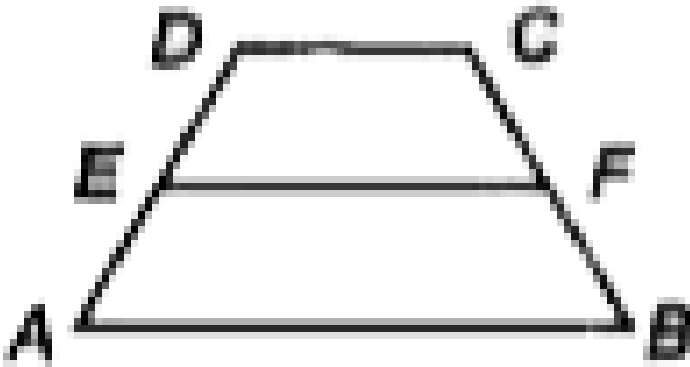
**Answer: A**



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**14.** Let ABCD be a trapezium in which  $AB \parallel DC$  and E be the mid-point of AD. If F be a point on BC such that  $EF \parallel AB$ . Then EF, where F is the

mid-point of BC, is equal to



A.  $AB + DC$

B.  $\frac{1}{2}(AB + DC)$

C.  $\frac{1}{3}(AB + DC)$

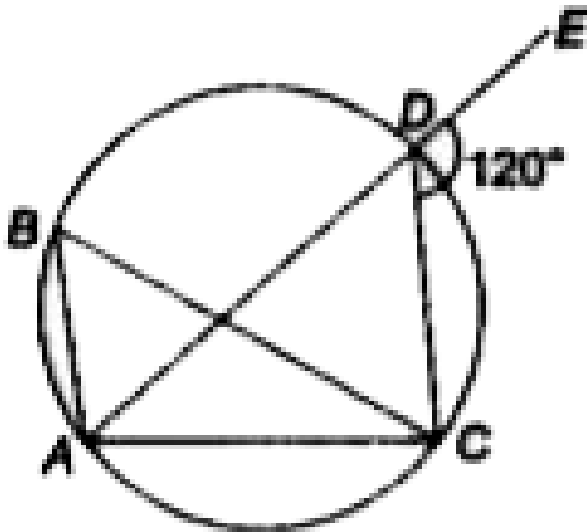
D. None of these

**Answer: B**





15. In the given figure, the value of  $\angle ABC$  is



A.  $70^\circ$

B.  $45^\circ$

C.  $60^\circ$

D.  $30^\circ$

**Answer: C**



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**16.** AB and CD are two chords of a circle such that  $AB = 10$  cm,  $CD = 24$  cm and  $AB \parallel CD$ . If the distance between AB and CD is 17 cm. Then, the radius of the circle is equal to

A. 13



B. 169

C. 26

D. None of these

**Answer: A**



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**17.** ABCD is a cyclic quadrilateral. AB and DC are the chords, when produced meet in E. Then, what kind of  $\triangle EBC$  and  $\triangle EDA$  are ?

A. Equilateral

B. Equiangular

C. Congruent

D. None of the above

**Answer: B**



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**18.** Two non-intersecting circles, one lying inside the other arc of radius  $x$  and  $y$  ( $x > y$ ).

If the minimum distance between

circumference is  $z$ . Then, the distance between their centres is

A.  $x + z - y$

B.  $x - z - y$

C.  $x - z + y$

D. None of these

**Answer: B**



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19. With the vertices of a  $\triangle ABC$  as centre three circles are described each touching the other two circles externally. If the sides of the triangles are 9 cm, 7 cm and 6 cm. Then, the radius of the circles (in cm) are

A. 4 cm, 5 cm, 2 cm

B. 6 cm, 3 cm, 2cm

C. 4 cm, 3 cm, 2 cm

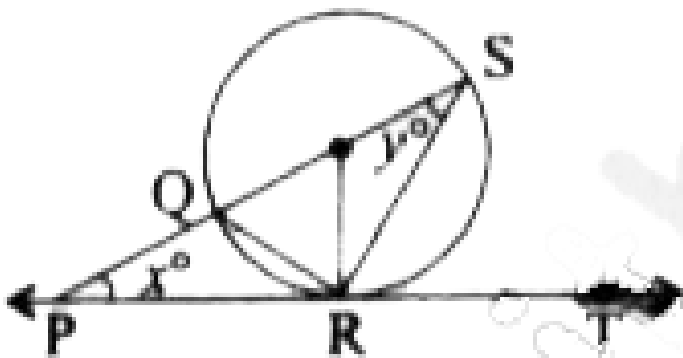
D. None of these

**Answer: A**



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20. In the given figure,  $PT$  is the tangent of a circle with centre  $O$  at point  $R$ . If diameter  $SQ$  is increased, it meets with  $PT$  at point  $P$ . If  $\angle SPR = x^\circ$  and  $\angle QSR = y^\circ$ . What is the value of  $x^\circ + 2y^\circ$  ?



A.  $180^\circ$

B.  $90^\circ$

C.  $270^\circ$

D. None of these

**Answer: B**



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