

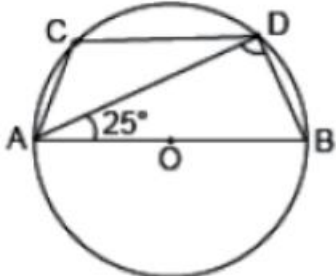
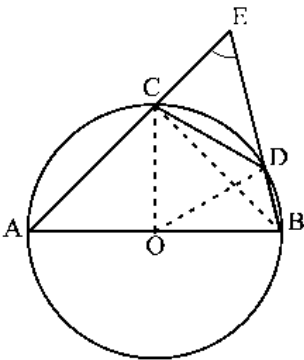
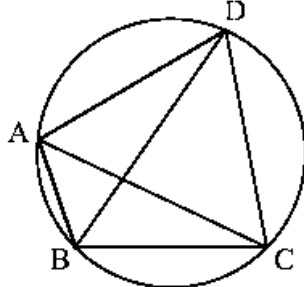
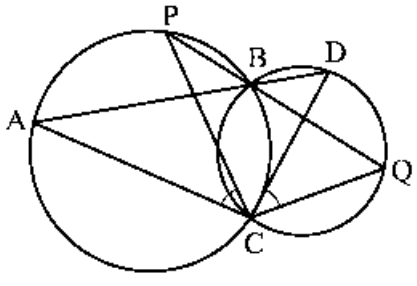
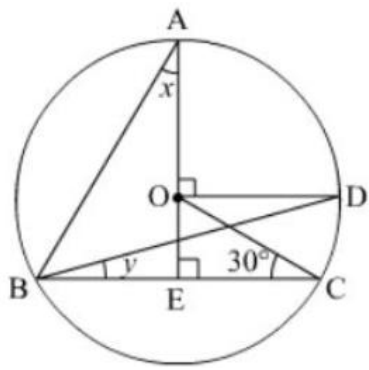
INDIAN SCHOOL AL WADI AL KABIR

Class IX, Mathematics

Worksheet- I'M UP AND DOWN, AND ROUND AND ROUND-DTQ

Short Answer Questions

Q.1	In the given figure, O is the centre of the circle and chord AC and BD intersect at P such that $\angle APB = 120^\circ$ and $\angle PBC = 15^\circ$, find the value of $\angle ADB$.	
Q.2	In figure, O is the centre of the circle. If $\angle AOB = 80^\circ$, then find the measure of $\angle ADB$ and $\angle ACB$.	
Q.3	Find the measures of $\angle BCD$ and $\angle ABC$ if $\angle BAC = 30^\circ$, $\angle ADC = 70^\circ$, $\angle DAE = 60^\circ$.	
Q.4	Construct a triangle ABC with sides $AB=6$ cm, $BC=8$ cm and $CA=10$ cm. Construct its circumcircle and measure its circumradius.	
Q.5	A chord of a circle is equal to the radius of the circle. Find the angle subtended by the chord at a point on the minor arc and also at a point on the major arc.	
Q.6	In figure, O is the centre of the circle of radius 5cm. $OP \perp AB$, $OQ \perp CD$, $AB = 6$ cm, $CD = 8$ cm. Determine PQ.	

Q.7	In the given figure, AB is diameter of the circle with centre O and $CD \parallel AB$. If $\angle DAB = 25^\circ$, then find the measure of $\angle CAD$.	
Q.8	AB is a diameter of the circle, CD is a chord equal to the radius of the circle. AC and BD when extended intersect at a point E. Prove that $\angle AEB = 60^\circ$.	
Q9.	ABCD is a cyclic quadrilateral in which AC and BD are its diagonals. If $\angle DBC = 55^\circ$ and $\angle BAC = 45^\circ$, find $\angle BCD$.	
Q10.	Two circles intersect at two points B and C. Through B, two line segments ABD and PBQ are drawn to intersect the circles at A, D and P, Q respectively. Prove that $\angle ACP = \angle QCD$.	
Questions of 5 marks each		
Q11.	In the given figure O is the centre of the circle, $\angle BCO = 30^\circ$. If AE bisects $\angle BAC$, then find x and y.	

Q12. Construct an obtuse-angled triangle ABC where $AB = 5\text{ cm}$, $\angle A = 100^\circ$, and $AC = 4\text{ cm}$. Construct the circumcircle of ABC and state whether the circumcentre O lies inside or outside the triangle.

Case Study Question: Circular Flower Bed Design

During a school mathematics project, Riya and her classmates designed a circular flower bed featuring a central fountain at point O. To create distinct floral sections, two straight wooden dividers were placed along chords AB and CD inside the circle. The radius of the circular garden is 13m.

- The first wooden divider (chord AB) measures 24 m in length.
- The second wooden divider (chord CD) is placed at a perpendicular distance of 12m from the central fountain O.

Answer the following questions:

Q13. Find the perpendicular distance of the first wooden divider AB from the central fountain O.

Q14. Find the length of the second wooden divider CD.

Q15. If $\angle AOB = 130^\circ$, calculate the measure of $\angle APB$ subtended by the arc AB at point P on the major arc of the circle.

Answers							
Answers	1.	105°	2.	40° each	3.	$\angle BCD=130^\circ$, $\angle ABC=110^\circ$	5. 30°, 150°
	6.	7 cm	7.	40°	9.	80°	11. $X= 30^\circ$, $y=15^\circ$
	13.	5 m	14.	10 m	15.	115°	
