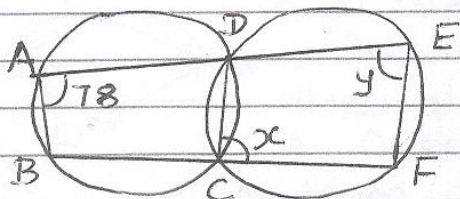


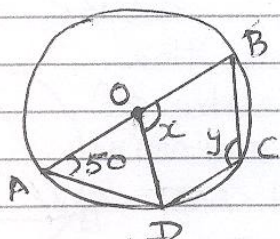
Worksheet Circles.

Gr IX



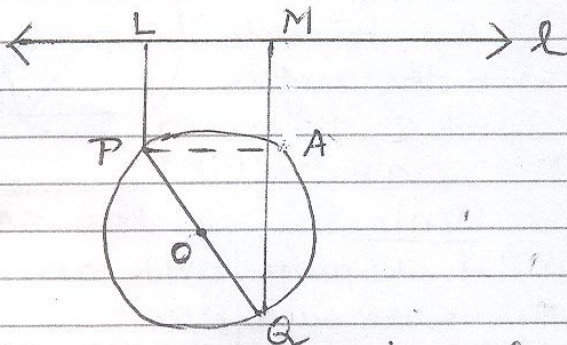
Find x and y

(2)

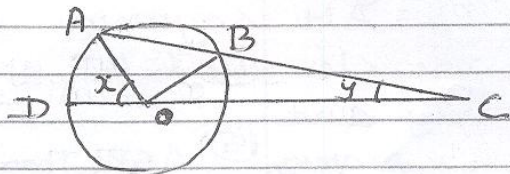


Find x and y .

(3)



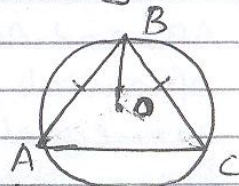
PQ is a diameter of a circle with centre O . If PL and QM are perpendiculars on a line l and QM intersects the circle at A , Prove that $PL = AM$.



AB is a chord of a circle with centre O and AB is produced to C such that $BC = OB$. Also, CO is joined and produced to meet the circle in D. If $\angle ACD = y$ and $\angle AOD = x$

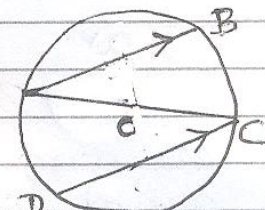
Prove that $x = 3y$

⑤ $\triangle ABC$ is an isosceles triangle in which $BA = BC$



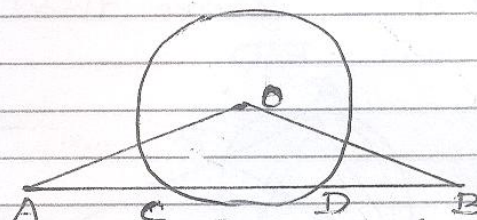
Prove that the line segment joining the centre O of the circumcircle of $\triangle ABC$ to the vertex B bisects $\angle ABC$.

⑥ AC is a diameter of a circle with A centre O. If



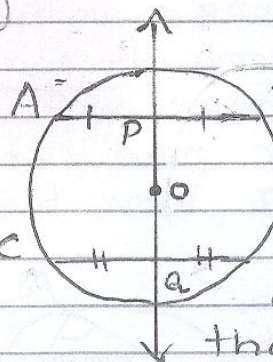
are two chords such that $AB \parallel CD$. Prove that $AB = CD$.

(4)



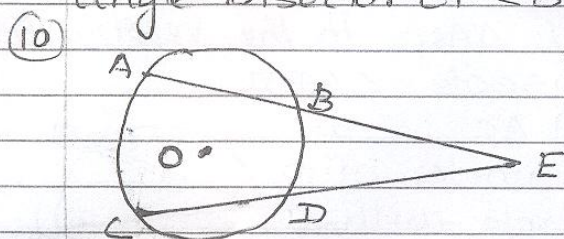
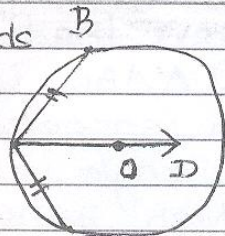
O is the centre of a circle. In $\triangle OAB$, $OA = OB$
Prove that $AC = BD$

8

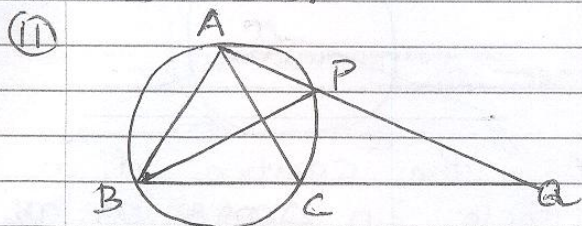


If a diameter
of a circle
bisects each
of the two
chords of a
circle, prove
the chords
parallel.

- (9) Two chords AB and AC of a circle are equal. Prove that the centre O of the circle lies on the angle bisector of $\angle BAC$.

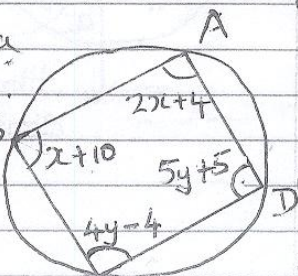


AB and CD are two equal chords of a circle whose centre is O. When produced these chords meet at E. Prove that $EB = ED$.

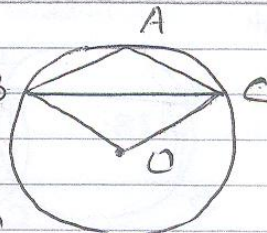


The bisector of $\angle B$ of an Isos. $\triangle ABC$ with $AB = AC$ meets the circumcircle of $\triangle ABC$ at P. If AP and BC produced meet at Q. Prove that $CQ = CA$.

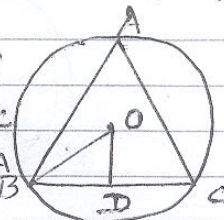
- (12) ABCD is a cyclic Quad. Find x and y and thus find angles of Quad.



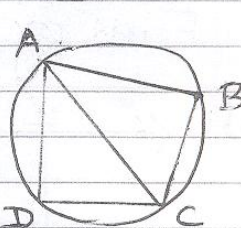
- (13) BC is a chord of a circle with centre O. A is a point on the arc CB. Prove that $\angle BAC = \angle OBC = 90^\circ$.



- (14) O is the circumcentre of $\triangle ABC$ and $OD \perp BC$. Prove that $\angle BOD = \angle A$.



- (15) ABCD is a cyclic Quad. If AC bisects both the angles A and C, then $\angle ABC = 90^\circ$.



Hints

- (1) Ext. $\angle$ prop, opp. $\angle$ s are supp
 $x = 78$ $y = 102$
(2) opp $\angle$ s of cyclic, Use thm 10.8

- (3) Prove it is a Rectangle Thus $PL = AM$

- (4) Base $\angle$ property and Ext. $\angle$ property

- (5) Join OA, OC Use SSS $\cong$

- (6) Construct lrs. prove Cong. Δ s.

- (7) Similar to T.B Ex 10.4, 4th Qn.

- (8) Use Thm 10.4

- (9) Use SAS $\cong$ and prove by CPCT

- (10) Draw lrs, make Δ s, prove Congruence.

- (11) Ext. $\angle$ s, Base $\angle$ s, $\angle$ in a same segment

- (12) $x = 40$, $y = 25$ find all $\angle$ s.

- (13) ASP, Thm 10.8

- (14) Join OC Use Cong. Rule

- (15) opp. $\angle$ s are supp.

— x —