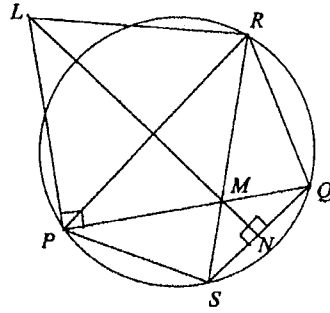


**PAST EXAMINATION QUESTIONS**  
**CSSA 2004**

**Question 8**

(a)



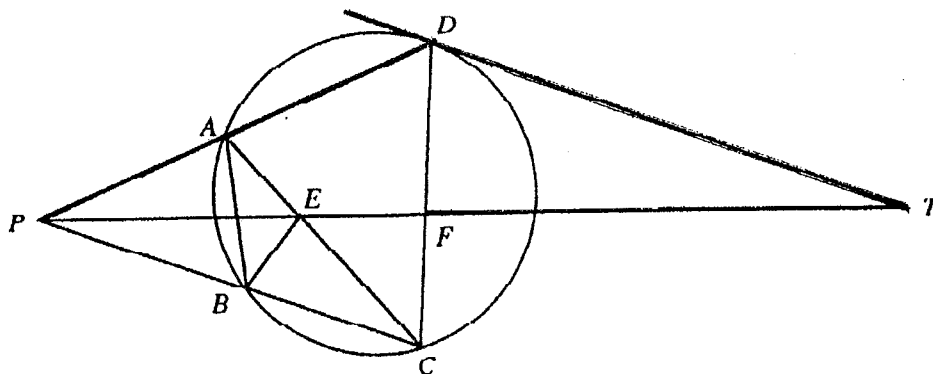
$PQ$  and  $RS$  are two chords of a circle which intersect at  $M$  inside the circle.  $MN$  is the perpendicular from  $M$  to  $SQ$ .  $L$  is the point on  $NM$  produced such that  $LP$  is perpendicular to  $PQ$ .

- (i) Copy the diagram.  
 (ii) Show that  $\triangle PML \parallel \triangle NMQ$

(iii) Hence show that  $LR \perp RS$ .

CSSA 2002

7 (a)



$ABCD$  is a cyclic quadrilateral.  $DA$  produced and  $CB$  produced meet at  $P$ .  $T$  is a point on the tangent at  $D$  to the circle through  $A, B, C$  and  $D$ .  $PT$  cuts  $CA$  and  $CD$  at  $E$  and  $F$  respectively.  $TF = TD$ .

- (i) Copy the diagram.
- (ii) Show that  $AEFD$  is a cyclic quadrilateral.

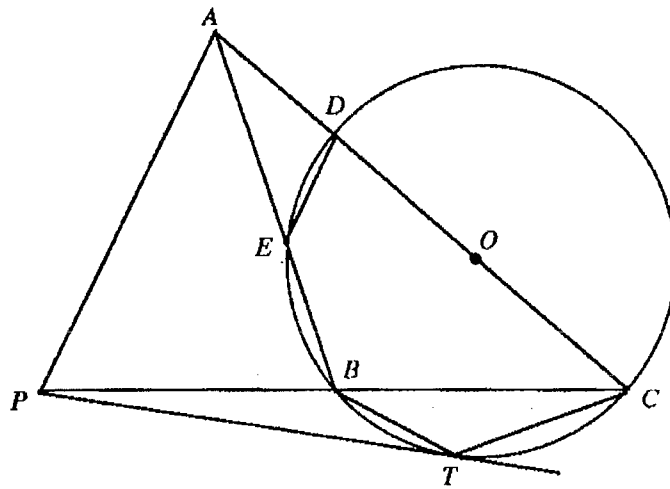
3

- (iii) Show that  $PBEA$  is a cyclic quadrilateral.

2

CSSA 2001**Question 7****Begin a new page**

(a)



$A$  is a point outside a circle with centre  $O$ .  $P$  is a second point outside the circle such that  $PT = PA$  where  $PT$  is a tangent to the circle at  $T$ .  $AO$  cuts the circle at  $D$  and  $C$ .  $PC$  cuts the circle at  $B$ .  $AB$  cuts the circle at  $E$ .

- (i) Copy the diagram.  
 (ii) Show that  $\triangle PBT \parallel \triangle PTC$ .

2

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(iii) Show that  $\triangle APB \cong \triangle CPA$ .

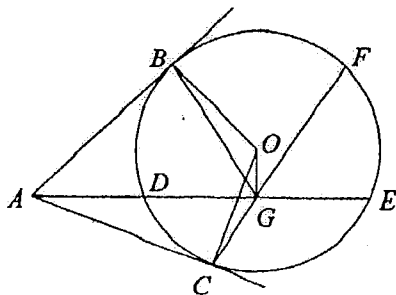
3

(iv) Hence show that  $DE$  is parallel to  $AP$ .

3

CSSA 2000

8. (a)



In the diagram,  $AB$  and  $AC$  are tangents from  $A$  to the circle with centre  $O$ , meeting the circle at  $B$  and  $C$ .  $ADE$  is a secant of the circle.  $G$  is the midpoint of  $DE$ .  $CG$  produced meets the circle at  $F$ .

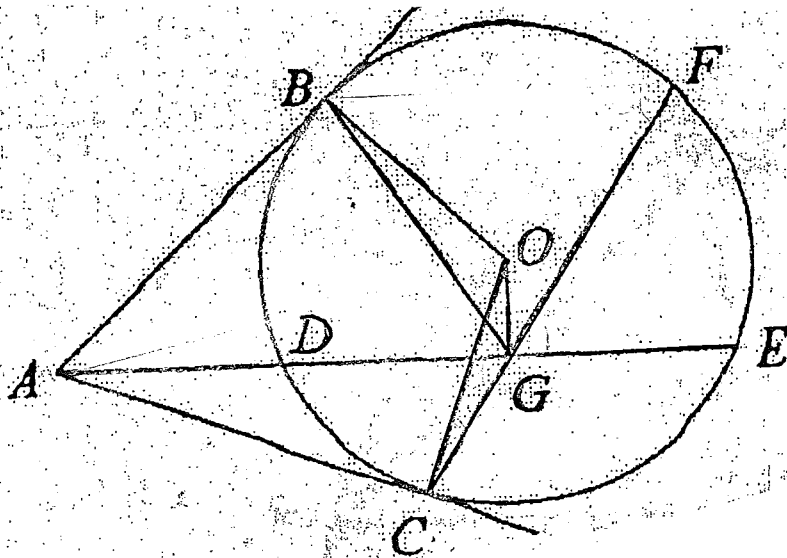
(i) Copy the diagram.

(ii) Show that  $ABOC$  and  $AOGC$  are cyclic quadrilaterals.

3

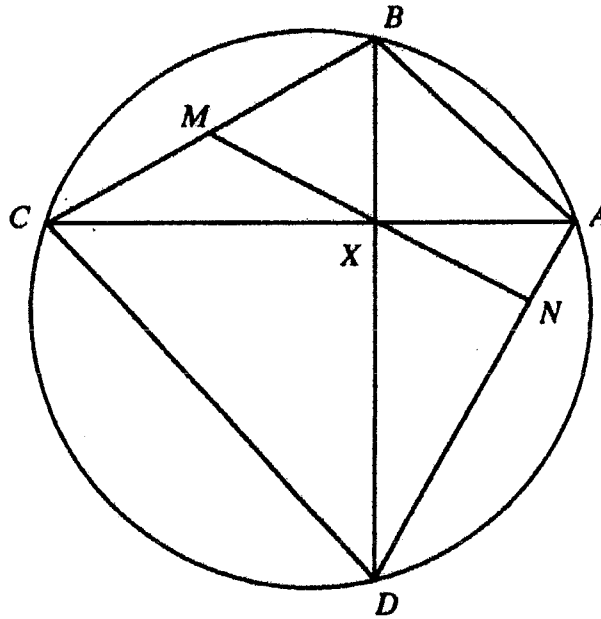
(iii) Show that  $BF \parallel ADE$ .

2



CSSA '99

## Question 8



$ABCD$  is a cyclic quadrilateral. The diagonals  $AC$  and  $BD$  intersect at right angles at  $X$ .  $M$  is the midpoint of  $BC$ .  $MX$  produced meets  $AD$  at  $N$ .

- (i) Copy the diagram showing the above information.
- (ii) Show that  $M\hat{B}X = M\hat{X}B$

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(iii) Show that  $MN$  is perpendicular to  $AD$ .