



$\angle EDA = \angle EBA$ [Same segment angles are equal] (A,B,D,E are Cyclic)

$\angle CBA = \angle CNA$ [Same segment A,B, N,C are cyclic]
 ($\angle EBA$)

$\angle DEB = \angle DAB$ [Same segment A, B,D,E are cyclic]

$\angle DAB = \angle CMB$ [Same segment A,B,C,M are cyclic]
 ($\angle CAB$)

Now consider $\triangle CQM$ & $\triangle CRE$

$\angle R = \angle Q = 90^\circ$

$\angle M = \angle E$ [Proved]

$CM = CE$ [Given]

$\therefore \triangle CQM \cong \triangle CRE$ [AAS congruency]

$\Rightarrow CQ = CR$ [CPCT] ----- (1)

Similarly $\triangle CPN \cong \triangle CRD$ [AAS congruency]

$\Rightarrow CP = CR$ [CPCT] ----- (2)

From (1) & (2) $CQ = CP$

Now consider $\triangle COQ$ & $\triangle COP$

$$\angle Q = \angle P = 90^\circ$$

$$CQ = CP \text{ (Proved)}$$

$$CO = CO \text{ (common side)}$$

$$\therefore \triangle COQ \cong \triangle COP \text{ [RHS Congruency]}$$

$$\therefore CQ = OP \text{ [CPCT]}$$

Hence Proved .
