

b. $OC = OB$ (radii of circle (c))

then, O is equidistant from C + B.

So, O belongs to perpendicular bisector of $[CB]$

$FC = FB$ (Sides held by main vertex of isosceles $\triangle CFB$)

then, F is equidistant from C + B.

So, F belongs to perpendicular bisector of $[CB]$

$\therefore (OF)$ is the perpendicular bisector of $[CB]$

5) a. Since quadrilateral ACNB is cyclic (Given)

Then, $\hat{CAB} + \hat{CNB} = 180^\circ$ (sum of opp angles in a cyclic quad.)

but, $\hat{CAB} = 60^\circ$ (proved)

then $\hat{CNB} = 180^\circ - 60^\circ$

$$\therefore \boxed{\hat{CNB} = 120^\circ}$$

* $\hat{CBF} = 45^\circ$ (base angle of ^{right} isosceles triangle BFC).

$\hat{BNC} = 120^\circ$ (proved)

And, $\hat{CBF} + \hat{BNC} + \hat{NCB} = 180^\circ$ (sum of angles in triangle BNC)

Hence, $\hat{NCB} = 180^\circ - 45^\circ - 120^\circ$

$$\therefore \boxed{\hat{NCB} = 15^\circ}$$

b. $[AB] \perp [DE]$ (Given)

Then, $\hat{AOD} = 90^\circ$ (central angle formed by perp. diameters)

but, $\hat{AOC} = 60^\circ$ (angle formed by sides of equilateral $\triangle ACO$)

hence, $\hat{COD} = 30^\circ$ (complement of \hat{AOC})

but, $\hat{COD} = \text{mes } \widehat{CD}$ (central angle)

$$\therefore \widehat{CD} = 30^\circ$$