

$$* \hat{CND} = \text{mes } \frac{\widehat{CD}}{2} \text{ (inscribed angle)}$$

$$= \frac{30^\circ}{2}$$

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

$$* \hat{BCN} = 15^\circ \text{ (proved)}$$

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then, $\hat{BCN} = \hat{CND} = 15^\circ$ (By comparison)

$\therefore (CB) \parallel (DN)$ (st. lines holding equal alt. interior angles)

$$6) \hat{AMC} = \text{mes } \frac{(\widehat{AC} + \widehat{EB})}{2} \text{ (Interior angle)}$$

$$\text{but } \widehat{AC} = 60^\circ \text{ (proved)}$$

And $\widehat{EB} = 90^\circ$ (Arc formed by perpendicular diameters)

$$\text{Hence, } \hat{AMC} = \frac{60^\circ + 90^\circ}{2}$$

$$\therefore \boxed{\hat{AMC} = 75^\circ}$$