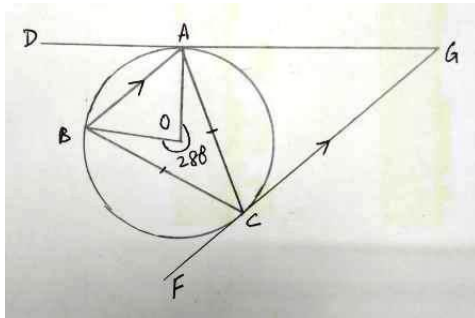


Answers:

(1)



(a) Obtuse $\angle AOB = 360^\circ - 280^\circ$
 $= 80^\circ$

$$\begin{aligned}\therefore \angle ACB &= \frac{1}{2} \angle AOB \text{ (\angle at centre = twice \angle at circum.)} \\ &= \frac{1}{2} (80^\circ) \\ &= 40^\circ\end{aligned}$$

(b) $\angle BAC = \angle ABC$ ($AC = BC$)

$$\begin{aligned}\therefore \angle BAC &= \frac{1}{2} (180^\circ - 40^\circ) \\ &= 70^\circ\end{aligned}$$

$\angle BAO = \angle ABO$ (OA and OB are radii)

$$\begin{aligned}\therefore \angle BAO &= \frac{1}{2} (180^\circ - 80^\circ) \\ &= 50^\circ\end{aligned}$$

$$\begin{aligned}\therefore \angle OAC &= \angle BAC - \angle BAO \\ &= 70^\circ - 50^\circ \\ &= 20^\circ\end{aligned}$$

(c) $\angle OAG = 90^\circ$ (radius \perp tangent)

$$\begin{aligned}\therefore \angle GAC &= 90^\circ - \angle OAC \\ &= 90^\circ - 20^\circ \\ &= 70^\circ\end{aligned}$$

$\angle GAC = \angle GCA$ ($AG = CG = \text{tangents}$)

$$\begin{aligned}\therefore \angle AGC &= 180^\circ - (70^\circ + 70^\circ) \\ &= 40^\circ\end{aligned}$$