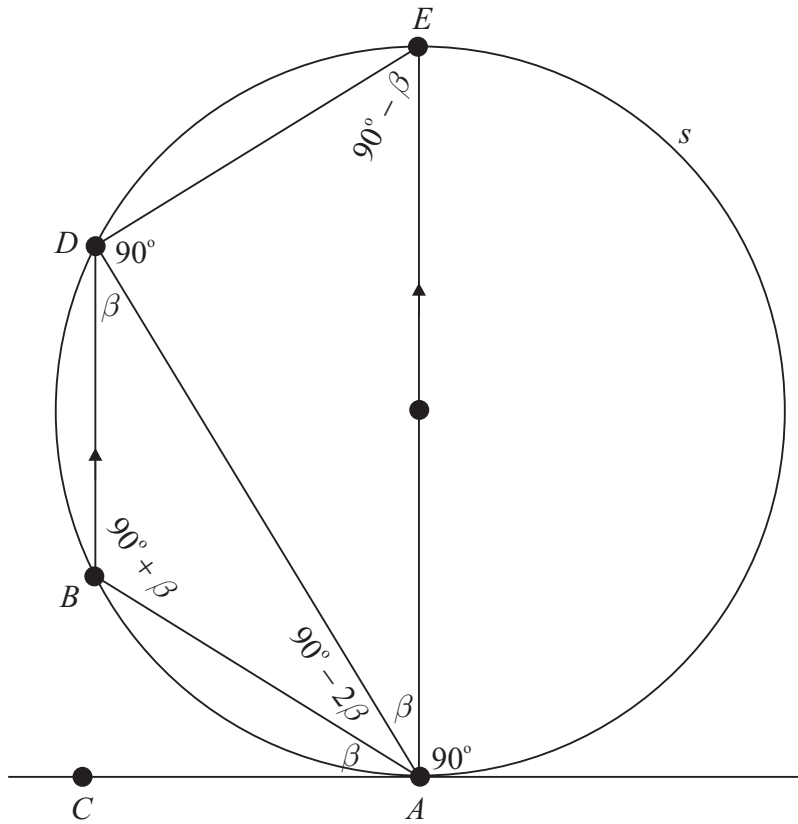


SAMPLE PAPER 6: PAPER 2

QUESTION 6 (25 MARKS)



Consider triangle ADE . Let $|\angle DAE| = \beta$.

$[AE]$ is a diameter. Therefore, $|\angle ADE| = 90^\circ$. (The angle at the circle standing on a diameter is a right angle).

$$\therefore |\angle DEA| = 180^\circ - 90^\circ - \beta = 90^\circ - \beta$$

$$|\angle AED| + |\angle ABD| = 180^\circ \text{ (Opposite angles of a cyclic quadrilateral add up to } 180^\circ\text{.)}$$

$$\therefore |\angle ABD| = 180^\circ - (90^\circ - \beta) = 90^\circ + \beta$$

$$|\angle DAE| = |\angle ADB| = \beta \text{ (Alternate angles)}$$

$$\therefore |\angle DAB| = 180^\circ - \beta - (90^\circ + \beta) = 90^\circ - 2\beta$$

$$\therefore |\angle BAC| = 90^\circ - \beta - (90^\circ - 2\beta) = \beta$$

$$\therefore |\angle BAC| = |\angle DAE| = |\angle ADB| = \beta$$