

U7D7 **MPM1DI – Unit #7 –Geometric Properties : Review Questions**

1. Find angle a, b, c, d and explain your reasoning.

$$a = 140 \text{ degrees (SA)}$$

$$d = 360 - (140 + 115) \text{ (PEAST)}$$

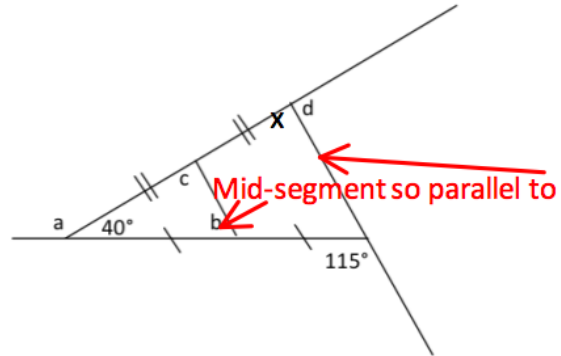
$$= 105 \text{ degrees}$$

$$x = 75 \text{ degrees (SA)}$$

$$c = 75 \text{ degrees (TPT-CA)}$$

$$b = 180 - (40 + 75) \text{ (ASTT)}$$

$$= 65 \text{ degrees}$$



2. Find the measure of all the unknown angles and justify your answers.

$$2x + 40 + 2x = 180 \text{ (SA)}$$

$$4x = 140$$

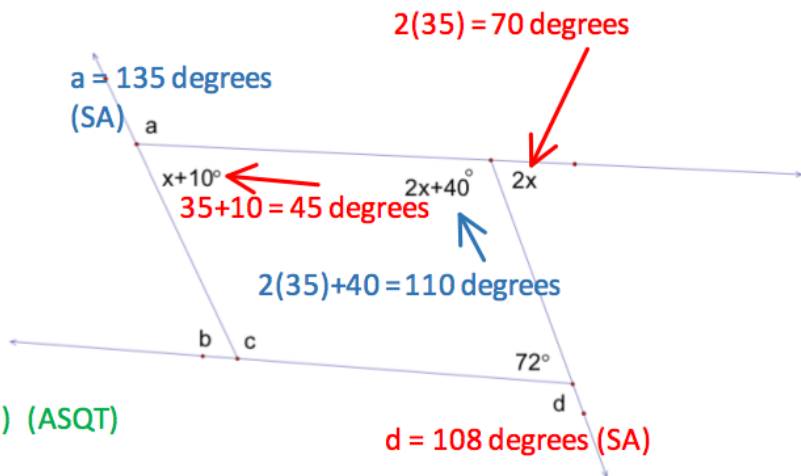
$$x = 35 \text{ degrees}$$

$$c = 360 - (45 + 72 + 110) \text{ (ASQT)}$$

$$= 360 - 227$$

$$= 133 \text{ degrees}$$

$$b = 47 \text{ degrees (SA)}$$



3. How many sides does a polygon have if the sum of its interior angles is 1980° ?

$$180(n-2) = 1980 \quad (\text{ASPT})$$

$$n-2 = 1980/180$$

$n-2 = 11$ (drawing in all diagonals from one vertex makes 11 triangles inside the polygon)

$$n = 11+2$$

$n = 13$		The polygon has 13 sides.
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4. A dodecagon is a 12-sided figure. The sum of 11 angles of a dodecagon is 1710° , what is the measure of the 12th angle?

$$\begin{aligned} \text{By ASPT, the sum of the interior angles is } & 180(12-2) \\ & = 180(10) \\ & = 1800 \text{ degrees} \end{aligned}$$

If the first 11 angles sum to 1710 degrees, the final angle must be $1800 - 1710 = 90$ degrees.