Answer on Question #57012 – Math – Geometry

If DB bisects ADC m<1=(3x+4), and m<2=(5x-2) find x

Solution

If angles ∠1 and ∠2 are corresponding, or alternate interior, or alternate exterior, then they are equal, hence their measures are equal

$$\rightarrow \quad 3x + 4 = 5x - 2 \quad \rightarrow \quad 2x = 6 \quad \rightarrow \quad x = 3 \; .$$

If angles ∠1 and ∠2 are consecutive interior angles, then they add up to 180°,

hence

$$3x + 4 + 5x - 2 = 180$$

$$8x + 2 = 180$$

$$8x = 178$$

$$x = \frac{178}{8},$$

that is,

$$x = 22^\circ 15'.$$