15.2 Angles in Inscribed Quadrilaterals

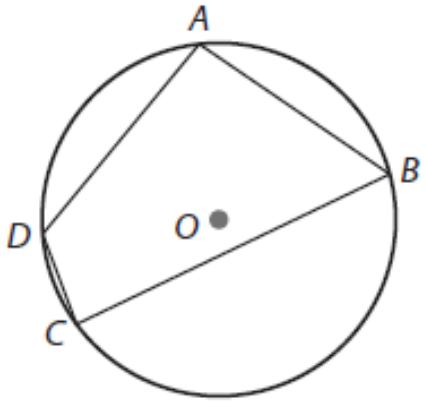
What can you conclude about the angles of a quadrilateral inscribed in a circle?

Inscribed Quadrilateral Theorem

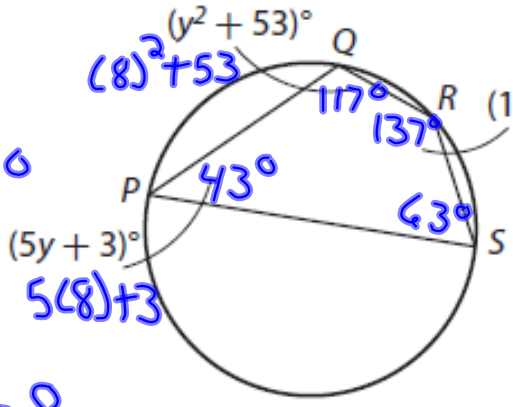
If a quadrilateral is inscribed in a circle, then its opposite angles are supplementary.

Quadrilateral $ABCD$ is inscribed in circle O.

$\angle A$ and $\angle C$ are supplementary.
$\angle B$ and $\angle D$ are supplementary.



Find the angle measures of the inscribed quadrilateral.



$5y+3+15y+17=180$

$20y+20=180$

$-20 \quad -20$

$\frac{20y}{20}=\frac{160}{20}$ $y=8$

$(8)^2+53$

$117°$

$137°$

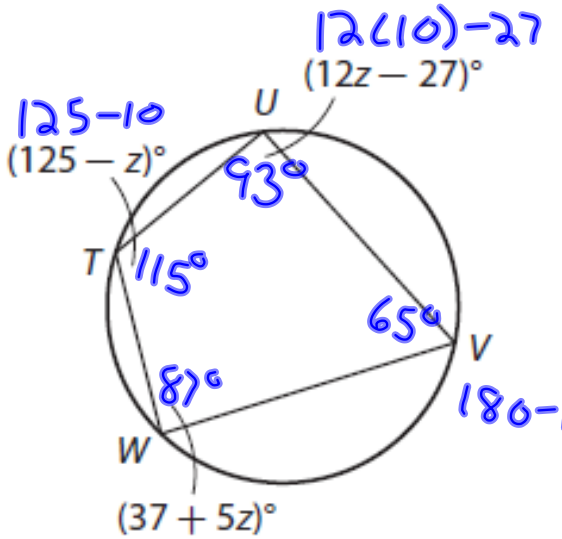
$15(8)+17$

$43°$

$63°$

$5(8)+3$

$180-117$



12(10)−27

125−10

93°

115°

65°

180−115

81°

37+5(10)

$12z - 27 + 37 + 5z = 180$

$17z + 10 = 180$

$17z = 170$

$z = 10$

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