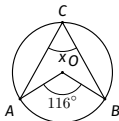


Push Tasks



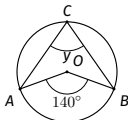
Chain the centre/circumference theorem with the base angles of isosceles triangle OAB (radii $OA = OB$).

1.



Find x , then the base angles.

2.



Find y , then the base angles.

3. A centre angle is $(5x - 8)^\circ$, and the same-arc circumference angle is $(2x + 10)^\circ$. Find x .

4. Tangent at P ; radius OP ; chord PQ with $OP = OQ$; $\angle OQP = 34^\circ$. Find the angle between the tangent and PQ .

Push Tasks



Chain the cyclic-quadrilateral theorem with the centre/circumference theorem or the quadrilateral angle sum.

5. A cyclic quadrilateral has angles x° , 95° , 65° , y° in order around the circle. Find x and y .

6. A cyclic quadrilateral has one angle 128° . Its two adjacent angles are equal to each other. Find those two angles.

7. In a circle, centre angle $AOC = 140^\circ$. $ABCD$ is a cyclic quadrilateral, B on the major arc. Find $\angle ABC$, then $\angle ADC$.

8. In a circle, cyclic quadrilateral $ABCD$ has $\angle ADC = 118^\circ$, B on the major arc. Find $\angle ABC$, then centre angle $\angle AOC$.

Push Tasks



Explain and correct errors in circle-theorem reasoning.

9. A student says: "The centre angle is 150° , so the same-arc circumference angle is 85° ." Explain the error and give the correct answer.

11. A cyclic quadrilateral has equal opposite angles, x° and x° . A student says this is only possible if $x = 90$. Is the student correct? Explain.

10. A student says a 100° angle can stand in a semicircle. Explain why this is impossible.

12. Explain how the tangent-radius, semicircle, and cyclic-quadrilateral theorems are all connected by right angles in circle geometry.