

Circle Theorem

Apply the correct circle theorem to find each missing angle.



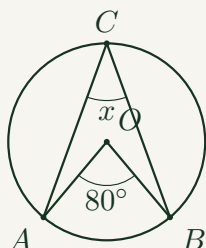
Name _____

Date _____

Name the theorem first

Before calculating, state which of the five circle theorems applies. Show your equation, then solve for the unknown.

Worked example The angle at the centre is 80° . Find the angle at the circumference, x , on the same arc.

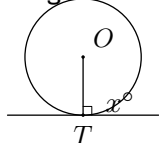


The angle at the centre is double the angle at the circumference.

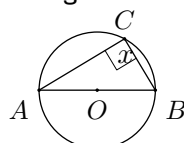
$$80 = 2x$$

$$x = 40^\circ$$

1. Find the angle x .



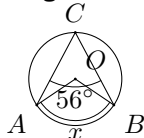
2. Find the angle x .



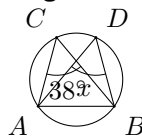
3. Find the angle x .



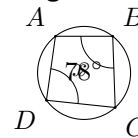
4. Find the angle x .



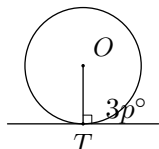
5. Find the angle x .



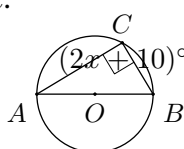
6. Find the angle x .



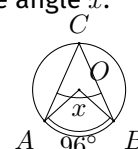
7. Find p .



8. Find x .



9. Find the angle x .



Circle Theorem (continued)

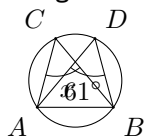
Apply the circle theorems, including multi-part and algebraic problems.



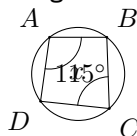
Name _____

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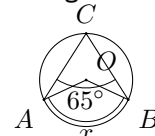
10. Find the angle x .



11. Find the angle x .



12. Find the angle x .



13. A tangent touches a circle at T . Find the angle between the tangent and radius OT .

14. The centre angle is $4x^\circ$; the same-arc circumference angle is $(x + 15)^\circ$. Find x .

15. Two angles in the same segment are $(3y - 4)^\circ$ and 41° . Find y .

16. Opposite angles in a cyclic quadrilateral are $(5z + 10)^\circ$ and 110° . Find z .

17. A tangent meets a radius at angle $(4w - 6)^\circ$. Find w .

18. The centre angle is 140° . Find the same-arc circumference angle and the radii triangle's base angles.
