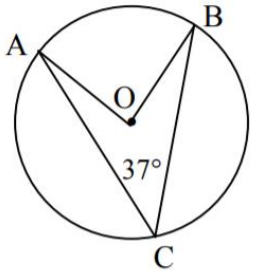
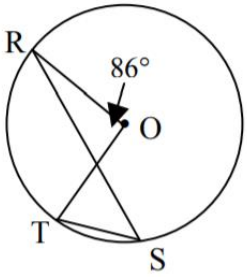
5.6 Homework Handout: Circle Properties

PART A

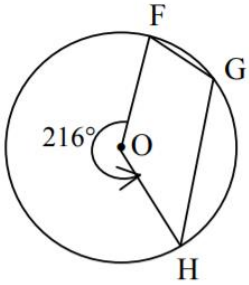
1. Determine the measure of $\angle AOB$ and explain your reasoning.



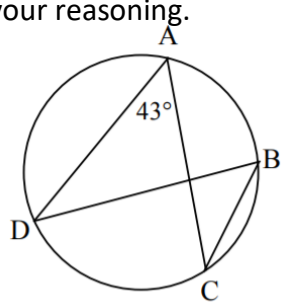
2. Determine the measure of $\angle RST$ and explain your reasoning.



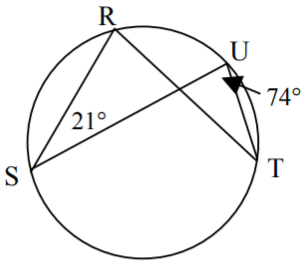
3. Determine the measure of $\angle FGH$ and explain your reasoning.



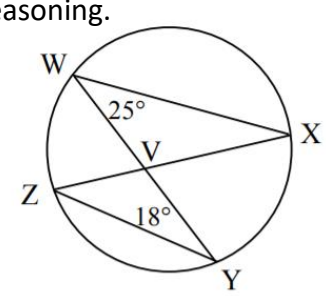
4. Determine the measure of $\angle CBD$ and explain your reasoning.



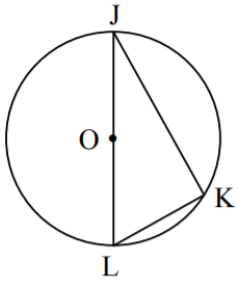
5. Determine the measure of $\angle SRT$ and $\angle RTU$ and explain your reasoning.



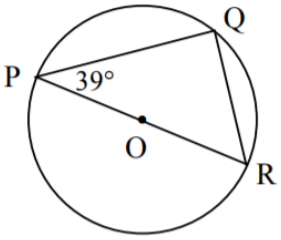
6. Determine the measure of $\angle WXZ$ and $\angle XVW$ and explain your reasoning.



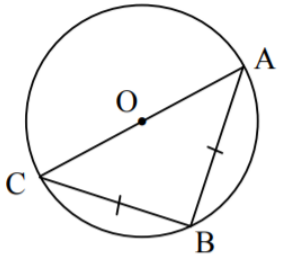
7. Determine the measure of $\angle JKL$ and explain your reasoning.



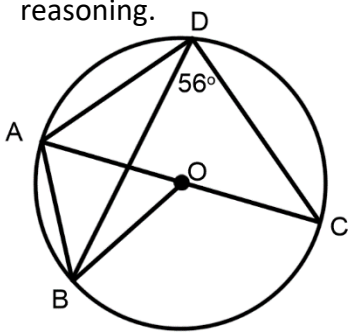
8. Determine the measure of $\angle PQR$ and $\angle PRQ$ and explain your reasoning.



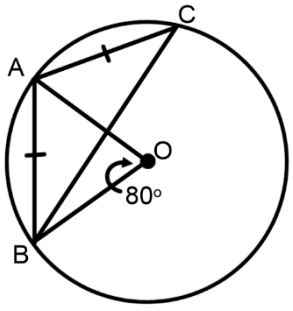
9. Determine the measure of $\angle CAB$ and explain your reasoning.



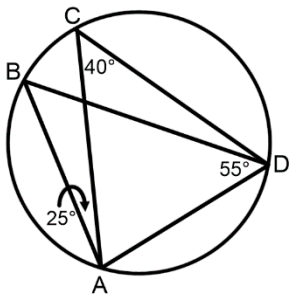
10. Find the measures of $\angle BAC, \angle BOC, \angle AOB, \angle BDA$ and explain your reasoning.



11. Find the measures of $\angle ABC$ and $\angle ACB$ and explain your reasoning.



12. Find the measures of $\angle ABD, \angle CDB$ and $\angle CAD$ and explain your reasoning.



Answers

1. $\angle AOB = 74°$ (The measure of the central angle is twice the measure of an inscribed angle subtended by the same arc)

2. $\angle RST = 43°$ (same reasoning as #1), 3. $\angle FGH = 108°$ (same reasoning as #1)

4. $\angle CBD = 43°$ (Inscribed angles subtended by the same arc are equal) 5. $\angle SRT = 74°$, $\angle RTU = 21°$ (same reasoning as #4)

6. $\angle WXZ = 18°$ (same reasoning as #4), $\angle WVX = 137°$ (angles in a triangle add to 180°)

7. $\angle JKL = 90°$ (the angle subtended by the diameter (or semi-circle) is 90°.

8. $\angle PQR = 90°$ (same reasoning as #7), $\angle PRQ = 51°$ (angles in a triangle add to 180°)

9. $\angle ABC = 90°$ (same reasoning as #7), $\angle CAB = 45°$ (ABC forms an isosceles triangle where $\angle CAB = \angle ACB$)

10. $\angle BAC = 56°$, $\angle BOC = 112°, \angle AOB = 68°$, $\angle BDA = 34°$

11. $\angle ACB = 40°, \angle ABC = 40°$ 12. $\angle ABD = 40°$, $\angle CDB = 25°$, $\angle CAD = 60°$