Angle properties of circles

6 questions | 14 marks

Equivalent correct methods earn the corresponding marks.

1. An inscribed angle subtends the same arc as a central angle of 146°. Find it. [2 marks]

$\frac{146}{2} = 73$.

Answer: 73°.

2. An inscribed angle is 48°. Find the central angle on its intercepted arc. [2 marks]

The central angle is twice the inscribed angle.

Answer: 96°.

3. P and Q lie on the same segment of chord AB. If $\angle APB = 57^\circ$, find $\angle AQB$. [2 marks]

Angles in the same segment are equal.

Answer: 57°.

4. AB is a diameter. In triangle APB, angle PAB is 31°. Find angle PBA. [2 marks]

Angle APB is 90°; use $180 - 90 - 31 = 59$.

Answer: 59°.

5. The major arc AB has central reflex angle 248°. P lies on the minor arc AB. Find angle APB. [3 marks]

P intercepts the major arc, so the correct calculation is $\frac{248}{2} = 124$.

Answer: 124°.

6. Explain why two angles subtending chord AB from opposite segments sum to 180°. [3 marks]

Each inscribed angle is half its intercepted arc measure.

The two arcs make the complete circle, so the angle sum is $\frac{360^\circ}{2} = 180^\circ$.

Answer: They intercept arcs whose measures total 360°.