

Solutions

Award method and answer marks as indicated; accept equivalent correct methods.

2.1

- 90° , angle in a semicircle.

2.2

- $A = 180 - 90 - 61 = \mathbf{29^\circ}$, using the triangle sum.

2.3

- 90° , tangent perpendicular to radius at contact.

2.4

- $O = 180 - 90 - 27 = \mathbf{63^\circ}$, using the triangle sum.

3.1

(a)

- 90° , angle in a semicircle.

(b)

- $B = 180 - 90 - 38 = \mathbf{52^\circ}$, triangle angle sum.

(c)

- 90° ; BA lies along the radius at B, and tangent is perpendicular to radius.

3.2

(a)

- $\angle ACB = \mathbf{90^\circ}$ because an angle in a semicircle is a right angle.
- Triangle angles sum to 180° , so $\angle CAB = 180 - 90 - 27 = \mathbf{63^\circ}$.

(b)

- $\angle OTP = \mathbf{90^\circ}$ because a tangent is perpendicular to the radius at contact.
- Triangle sum gives $\angle POT = 180 - 90 - 32$, so $\angle POT = \mathbf{58^\circ}$.