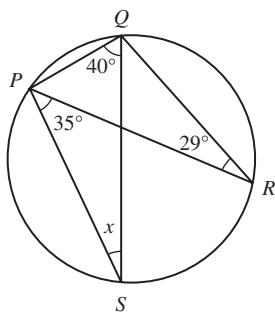


Fully-Worked Solutions

PRACTICE 6

Section A

1



$\angle PSQ$ and $\angle PRQ$ are angles at the circumference subtended by the same arc PQ .

$$\therefore \angle PSQ = \angle PRQ$$

$$x = 29^\circ$$

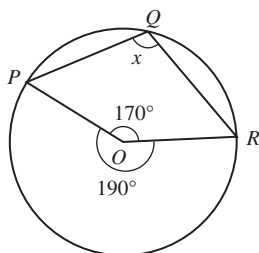
Answer: A

2 The angle at the centre of a circle subtended by the same arc is twice the angle at the circumference.

$$x = \frac{1}{2} \times 68^\circ = 34^\circ$$

Answer: B

3



The angle at the centre of a circle subtended by the same arc is twice the angle at the circumference.

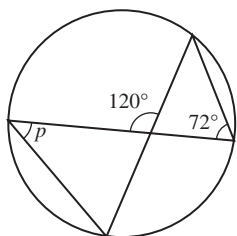
$$x = \frac{1}{2} \times 190^\circ = 95^\circ$$

Answer: C

$$4 \quad p + 72 = 120$$

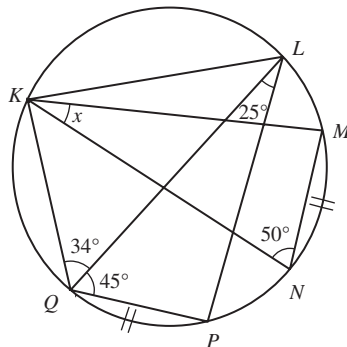
$$p = 120 - 72$$

$$= 48$$



Answer: B

5

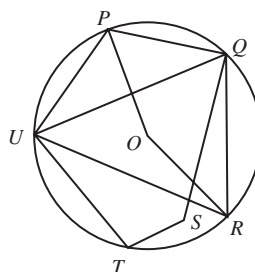


Arc length of PQ = Arc length of MN

$$x = 25^\circ$$

Answer: A

6



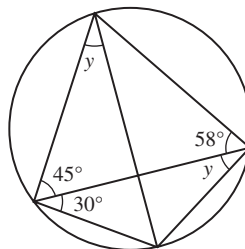
A cyclic quadrilateral is a quadrilateral in a circle with its four vertices lie on the circumference of the circle.

Answer: D

7 For a cyclic quadrilateral, the sum of opposite angles = 180°

Answer: C

8



$$y + 58 + 45 + 30 = 180$$

$$y + 133 = 180$$

$$y = 180 - 133$$

$$= 47$$

Answer: C

$$\begin{aligned}
 9 \quad 3p + 2p &= 180 \\
 p &= 36^\circ \\
 2q &= 180 - 100 = 80^\circ \\
 q &= 40^\circ \\
 \therefore p + q &= 36 + 40 = 76^\circ
 \end{aligned}$$

Answer: **B**

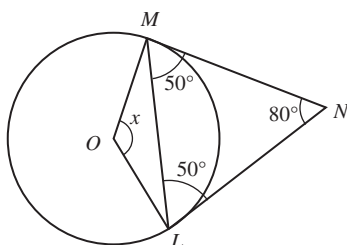
$$\begin{aligned}
 10 \quad x + 102 &= 180 \\
 x &= 78^\circ \\
 y &= 98^\circ \\
 \therefore x + y &= 78 + 98 \\
 &= 176^\circ
 \end{aligned}$$

Answer: **A**

- 11 Tangent to a circle is a straight line that touches the circle at one point.

Answer: **D**

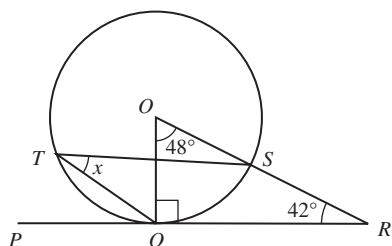
12



$$\begin{aligned}
 x + 80 &= 180 \\
 x &= 100
 \end{aligned}$$

Answer: **B**

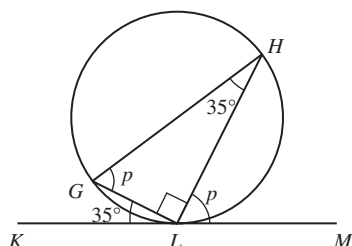
13



$$x = \frac{1}{2} \times 48^\circ = 24^\circ$$

Answer: **A**

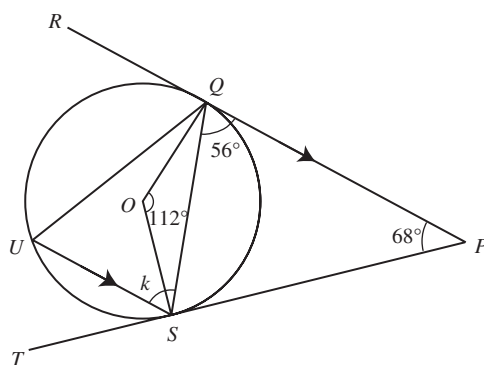
14



$$\begin{aligned}
 p + 35 + 90 &= 180 \\
 p + 125 &= 180 \\
 p &= 55
 \end{aligned}$$

Answer: **D**

15

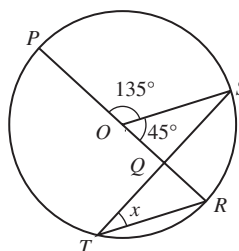


$$\begin{aligned}
 \angle P + 112^\circ &= 180^\circ \\
 \angle P &= 180^\circ - 112^\circ \\
 &= 68^\circ
 \end{aligned}$$

$$\begin{aligned}
 \angle SQP &= \frac{180 - 68}{2} \\
 &= 56^\circ \\
 \therefore k &= 56^\circ
 \end{aligned}$$

Answer: **B**

16



$$x = \frac{1}{2} \times 45^\circ = 22.5^\circ$$

Answer: **B**

$$\begin{aligned}
 17 \quad QR &= \sqrt{10^2 + 8^2} \\
 &= 12.81 \text{ cm} \\
 \angle PQL &= \angle KQR \\
 \sin \angle PQL &= \sin \angle KQR \\
 \frac{PL}{PQ} &= \frac{PK}{QR} \\
 \frac{3}{PQ} &= \frac{8}{12.81}
 \end{aligned}$$

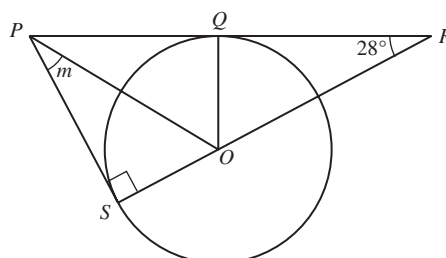
$$8PQ = 3 \times 12.81$$

$$PQ = 4.80 \text{ cm}$$

$$\therefore PR = 12.81 + 4.80 = 17.61 \text{ cm}$$

Answer: **D**

18



3 (a) $x = 180^\circ - 90^\circ - \frac{56^\circ}{2}$

$= 62^\circ$

(b) (i) $QR = QS = 6 \text{ cm}$

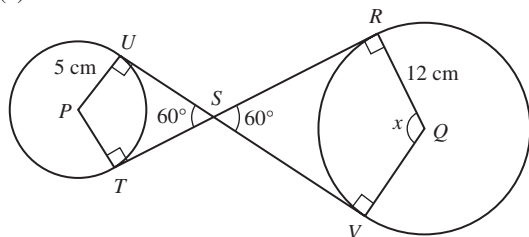
(ii) Let $\angle QOR = \theta$

$\tan \theta = \frac{6}{8}$

$\theta = \tan^{-1} \frac{3}{4} = 36.7^\circ$

$x = 2\theta$
 $= 2 \times 36.87$
 $= 73.74^\circ$

(c)



(i) $x = 180 - 60$
 $= 120^\circ$

(ii) $\sin 30^\circ = \frac{5}{PS}$; $\sin 30^\circ = \frac{12}{SQ}$

$PS = \frac{5}{\sin 30^\circ}$; $SQ = \frac{12}{\sin 30^\circ}$
 $= 10 \text{ cm}$ $= 24 \text{ cm}$

$\therefore PQ = PS + SQ$
 $= 10 + 24$
 $= 34 \text{ cm}$