



Additional Math with Ali Hashir

Circular Measure

Worksheet 1 — Answers

- Q1.** (a) $\frac{3\pi}{5}$. (b) 140° . (c) 137.5° . (d) $\frac{5\pi}{18} \approx 0.873$.
- Q2.** (a) 9.6 cm. (b) 25.6 cm. (c) 1.25 rad.
- Q3.** (a) 35 cm^2 . (b) 32.2 cm^2 . (c) 2.79 cm^2 .
- Q4.** (a) 12 cm. (b) 0.8 rad. (c) 90 cm^2 .
- Q5.** (a) 15.5 cm. (b) 29.8 cm^2 .
- Q6.** (a) 70.2 cm. (b) $\frac{575\pi}{12} \text{ cm}^2 (\approx 150.5 \text{ cm}^2)$.
- Q7.** (a) $4\pi \text{ m} (\approx 12.6 \text{ m})$. (b) $12\pi \text{ m}^2 (\approx 37.7 \text{ m}^2)$.
- Q8.** (a) $OP = 15 \text{ cm}$ (shown). (b) 0.927 rad. (c) 26.3 cm. (d) 16.4 cm^2 .
- Q9.** (a) 120 cm. (b) 2250 cm^2 .
- Q10.** (a) $\frac{3\pi}{4} \text{ rad}$. (b) 87.1 cm.
- Q11.** (a) 1.178 rad (shown). (b) 41.2 cm. (c) 41.2 cm^2 .
- Q12.** (a) 25 cm. (b) 1.287 rad. (c) 47.8 cm^2 .
- Q13.** (a) $PQ = 15.5 \text{ cm}$ (shown). (b) 1.146 rad (shown). (c) arc $AP = 13.8 \text{ cm}$, arc $AQ = 9.98 \text{ cm}$. (d) 24.2 cm^2 .
- Q14.** (a) 0.927 rad (shown). (b) 89.5 cm^2 .
- Q15.** (a) 13.0 cm. (b) 2.400 rad. (c) 3.30 cm. (d) 29.1 cm^2 .
- Q16.** $r = 8$, $OQ = 8\sqrt{3}$ (shown). (a) $96\pi \text{ cm}^2$. (b) $64\sqrt{3} \text{ cm}^2$. Hence $\frac{32}{3}(5\pi - 6\sqrt{3}) \text{ cm}^2$ (shown).
- Q17.** 17.5 cm^2 .