12 Angles in radians – Part 1 —Answers

Answers

Work through these after trying the questions yourself.

12.1 The angle at the centre of a circle whose arc length equals the radius.

12.2 $180° = \pi \approx 3.14$ rad.

12.3 $s = r\theta = 0.25 \times 2.0 = 0.50$ m.

12.4 $\omega = \theta/t$.

12.5 $\omega = \theta/t = \pi/2.0 \approx 1.6$ rad s^{-1}.

12.6 $v = r\omega = 0.30 \times 4.0 = 1.2$ m s^{-1}.

12.7 Both have the same ω, but $v = r\omega$, so the point at the larger radius moves faster. Its radius is twice as large (0.20 vs 0.10 m), so it moves twice as fast.