

Further Trigonometry

Answers

1 Radian Measure

- (a) 210° (b) 540° (c) 114.6° (d) 165°
- (a) 0.218 radians (b) 1.265 radians
(c) 3.665 radians (d) 0.349 radians

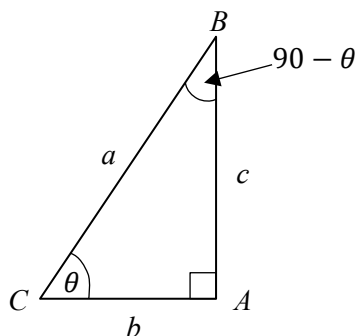
2 Arc and Sector Area

- (a) $\frac{5}{3}$ radians (b) $30\,207\text{ cm}^3$
- $r = 10\text{ cm}$, $\theta = 2$ radians
- 4 ms^{-1}

3 Sine, Cosine and Tangent Functions

- (a) 2.61 (b) 3.22 (c) 1.88
- (a) $\frac{1}{\sqrt{2}}$ (b) $-\frac{1}{\sqrt{2}}$ (c) $-\frac{1}{\sqrt{2}}$ (d) $\frac{1}{\sqrt{2}}$
(e) $-\frac{1}{\sqrt{2}}$ (f) 1 (g) -1 (h) -1

3.



$$\cos(90 - A) = \frac{c}{a} = \sin \theta$$

4 Solving Trigonometrical Equations

- 60° , 300°
- 45° , 225°
- 14.5° , 165.5° ,
- 210° , 330°
- 14.0° , 194.0° , 374.0° , 554.0°
- -0.340 radians, $-n + 0.340$ radians
- ± 1.23 radians
- (b), (c) and (e)

5 Properties of Trig Functions

1. $0^\circ, 180^\circ, 360^\circ$
2. $90^\circ, 210^\circ, 330^\circ$
3. $41.4^\circ, 120^\circ, 240^\circ, 318.6^\circ$
4. $\frac{3\pi}{4}, \frac{7\pi}{4}$
5. $18.4^\circ, 198.4^\circ$