

Trigonometry – Answer Sheet

Q1 8.2 cm

Q2 (a) 10.7 m (b) 8.0 m

Q3 4.2 m

Q4 9.2 cm

Q5 33°

Q6 22.6° , 67.4°

Q7 7.8°

Q8 51°

Q9 Yes (right-angled)

Q10 10.7 cm

Q11 9.9 m

Q12 12.2 m

Q13 400 m

Q14 23.3°

Q15 (a) 4.8° (b) 8.4%

Q16 22.9 m

Q17 (a) 264 m (b) 218°

Q18 5.6 km

Q19 $\sin 30^\circ = \frac{1}{2}$, $\cos 45^\circ = \frac{\sqrt{2}}{2}$, $\tan 60^\circ = \sqrt{3}$

Q20 Height = $6\sqrt{3}$ cm

Q1 Worked Challenge – Changing Angle of Depression

(a) *Initial horizontal distance*

$$d_1 = \frac{52}{\tan 18^\circ} \approx 160 \text{ m}$$

(b) *Second position*

$$d_2 = \frac{52}{\tan 27^\circ} \approx 102 \text{ m}$$

$$\text{Travel distance} = d_1 - d_2 \approx \boxed{58 \text{ m}}$$

(c) *Percentage change in angle*

$$\frac{27^\circ - 18^\circ}{18^\circ} \times 100\% = \boxed{50\%}$$