

Solutions

Each answer shows the steps, then the **result**.

2.1

- $A_x = 80 \cos 60^\circ = 40 \text{ N}$; $A_y = 80 \sin 60^\circ = 69 \text{ N}$

2.2

- $1.25 = \frac{1}{2}(10)t^2 \Rightarrow t^2 = 0.25, t = 0.50 \text{ s}$

2.3

- $x = 3.0 \times 0.50 = 1.5 \text{ m}$

2.4

- the time of flight (both motions last the same time)

3.1 C

3.2 B

3.3

(a)

- $v_{0y} = 20 \sin 30^\circ = 10 \text{ m s}^{-1}$

(b)

- $t = 10/10 = 1.0 \text{ s}$

(c)

- $h = \frac{v_{0y}^2}{2g} = \frac{10^2}{20} = 5.0 \text{ m}$