

Solutions

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

2.1

- $a = \frac{20}{4.0} = 5.0 \text{ m s}^{-2}$

2.2

- $F = ma = 1500 \times 2.0 = 3000 \text{ N}$

2.3

- $a = g \sin 30^\circ = 10 \times 0.5 = 5.0 \text{ m s}^{-2}$

2.4

- it also doubles (acceleration is proportional to net force)

3.1 C

3.2 D

- $F = 2.0 \times 5.0 = 10 \text{ N}$

3.3

(a)

- $a = \frac{15}{2.0 + 3.0} = 3.0 \text{ m s}^{-2}$

(b)

- On the 3.0 kg block, $F = ma = 3.0 \times 3.0 = 9.0 \text{ N}$