

Solutions

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

2.1

- Weight (mg , down) and the normal force (N , up)

2.2

- $20 - 8 = 12$ N to the right

2.3

- The forces acting *on* the object

2.4

- $mg \sin \theta = 2(10) \sin 30^\circ = 10$ N

3.1 B

- the net force is the vector sum of all forces on the object

3.2 B

- all forces acting on the object

3.3

(a)

- $30 - 12 = 18$ N

(b)

- $a = F/m = 18/5 = 3.6 \text{ m s}^{-2}$

3.4

(a)

- $mg \sin \theta = 4(10) \sin 37^\circ = 24$ N

(b)

- $a = g \sin \theta = 6 \text{ m s}^{-2}$