Solutions

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

2.1

- $v_{max} = A\omega = 0.2 \times 4 = 0.8$ m s^{-1}

2.2

- $a_{max} = A\omega^2 = 0.2 \times 16 = 3.2$ m s^{-2}

2.3

- At the equilibrium position

2.4

- The amplitude (the maximum displacement)

3.1 B

- maximum speed is at equilibrium

3.2 B

- $a_{max} = A\omega^2$

3.3

(a)

- $v_{max} = 0.05 \times 10 = 0.5$ m s^{-1}

(b)

- $a_{max} = 0.05 \times 100 = 5$ m s^{-2}

3.4

(a)

- Cosine, with $\varphi = 0$

(b)

- At the extremes