

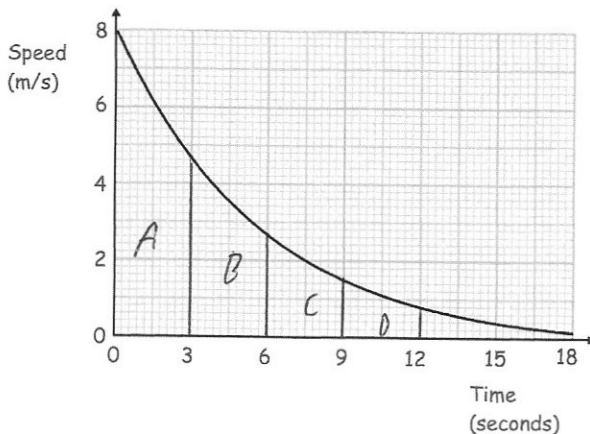
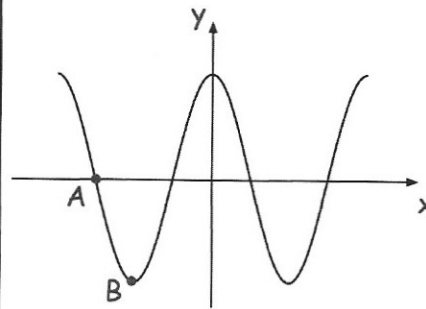


Here is a sketch of  $y = \cos(x)$

Write down the coordinates of point A and point B

$$A(-270, 0)$$

$$B(-180, -1)$$



$$A: \frac{1}{2}(8 + 4.6) \times 3 = 18.9 \text{ m}$$

$$B: \frac{1}{2}(4.6 + 2.6) \times 3 = 10.8 \text{ m}$$

$$C: \frac{1}{2}(2.6 + 1.5) \times 3 = 6.15 \text{ m}$$

$$D: \frac{1}{2}(1.5 + 0.8) \times 3 = 3.45 \text{ m}$$

$$39.3 \text{ m}$$

Work out an estimate for the distance travelled over the first 12 seconds of the journey. Use 4 strips of equal width.

Find the coordinates where the line  $y = x + 8$  and the curve  $y = x^2 + 19x + 80$  intersect

$$x^2 + 19x + 80 = x + 8$$

$$x^2 + 18x + 72 = 0$$

$$(x + 6)(x + 12) = 0$$

$$x = -6 \quad \text{or} \quad x = -12$$

$$y = 2 \quad \quad \quad y = -4$$

$$(-6, 2) \quad \text{and} \quad (-12, -4)$$

Solve

$$\frac{8^{4+x}}{4^{5-x}} = 0.5 \quad \frac{(2^3)^{4+x}}{(2^2)^{5-x}} = 2^{-1}$$

$$\frac{2^{12+3x}}{2^{10-2x}} = 2^{-1}$$

$$(12+3x) - (10-2x) = -1$$

$$2 + 5x = -1$$

$$5x = -3$$

$$x = -0.6$$