

Solutionbank M1

Heinemann Modular Maths for Edexcel AS and A-level

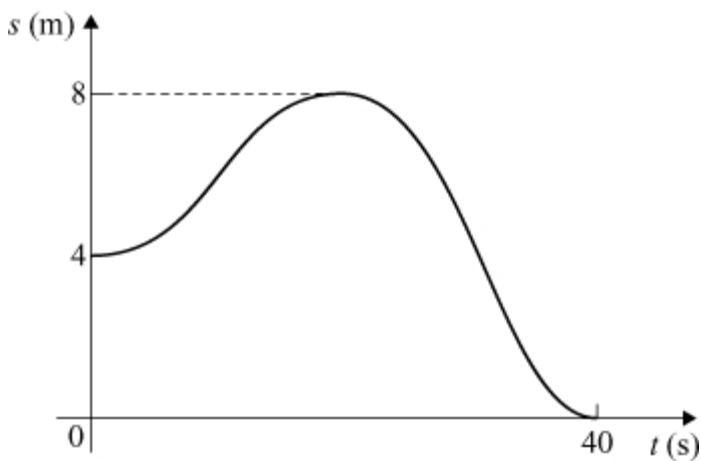
2 Kinematics in one dimension

Exercise A, Question 10

Question:

The displacement-time graph is for a lift.

- (a) Calculate the average speed of the lift during the 40-second period.
 (b) Calculate the average velocity of the lift during the 40-second period.



Solution:

$$(a) \text{ Average speed} = \frac{\text{Total distance}}{\text{Total time}} = \frac{(8 - 4) + (8 - 0)}{40} = \frac{12 \text{ m}}{40 \text{ s}}$$

$$\therefore \text{Average speed} = 0.3 \text{ m s}^{-1}$$

$$(b) \text{ Total displacement} = (0 - 4) = -4 \text{ m (i.e. gone down 4 m overall)}$$

$$\therefore \text{Average velocity} = \frac{-4}{40} = -0.1 \text{ m s}^{-1}$$

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