

Solutionbank M1

Heinemann Modular Maths for Edexcel AS and A-level

5 Newton's laws of motion

Exercise Test yourself, Question 1

Question:

A helicopter of mass 880 kg is rising vertically at a constant rate. Find the magnitude of the lift force acting on the helicopter. How would your answer change if the helicopter was descending at a constant rate?

Solution:

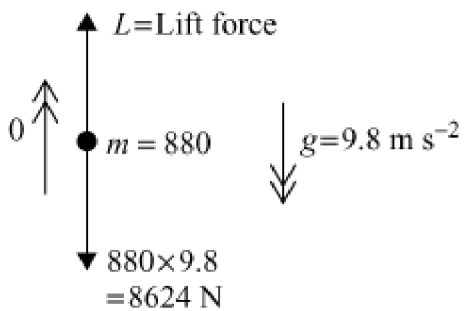
Newton's 2nd Law upwards

$$L - 8624 = 880 \times 0$$

$$\therefore L = 8624 \text{ N}$$

$$L = 8620 \text{ N (3 s.f.)}$$

If descending the equation remains the same i.e. no change, $L = 8620 \text{ N}$



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