



QUESTION WORKBOOK

Kinematics with constant acceleration

Mechanics · Year 12–13

6 questions · 20 marks

NAVY SCREEN EDITION

SECTION A · Warm-up

A1 List the five suvat quantities, and name the equation that leaves out s. [2]

A2 A car accelerates uniformly from rest at 2 m s^{-2} for 6 s. Find its final speed and the distance covered. [3]

SECTION B · Standard

B1 A car brakes uniformly from 30 m s^{-1} to rest over 150 m. Find the deceleration and the braking time. [4]

- B2** A stone is dropped from rest down a well and hits the water after 2.5 s. Taking $g = 9.8 \text{ m s}^{-2}$, find the depth and the impact speed. [4]

- B3** A ball is thrown vertically upwards at 14 m s^{-1} . Find its maximum height and its total flight time, taking $g = 9.8 \text{ m s}^{-2}$. [4]

SECTION C · Stretch

- C1** For the same throw, find the times at which the ball is 5 m above the launch point, and explain why there are two. [3]