



QUESTION WORKBOOK

Projectiles

Mechanics · Year 12–13

5 questions · 20 marks

PRINT EDITION

SECTION A · Warm-up

- A1** State the two facts about a projectile's velocity components that make the standard model work. [2]

- A2** A stone is thrown horizontally at 12 m s^{-1} from a cliff 44.1 m high. Taking $g = 9.8 \text{ m s}^{-2}$, find the time to land and the distance from the cliff base. [4]

SECTION B · Standard

- B1** A ball is struck at 24.5 m s^{-1} at 30° above the horizontal from level ground. Find the time of flight and the range. [5]

B2 For the same ball, find the maximum height above the ground. [4]

SECTION C · Stretch

C1 Find the speed and direction of motion of the same ball 0.5 s after launch. [5]