



QUESTION WORKBOOK

Straight lines

Coordinate geometry · Year 12–13

8 questions · 20 marks

NAVY SCREEN EDITION

SECTION A · Warm-up

- A1** Find the equation of the line through $(1, 3)$ and $(4, -3)$, giving your answer in the form $ax + by + c = 0$ with integer coefficients. [2]

- A2** Write down the gradient of any line perpendicular to a line of gradient $2/3$, and of any line perpendicular to a line of gradient -4 . [2]

SECTION B · Standard

- B1** Find the equation of the line through $(3, -1)$ and $(7, 1)$ in the form $ax + by + c = 0$. [3]

- B2** Find the equation of the perpendicular bisector of the segment joining $(1, 2)$ and $(7, 10)$. [3]

- B3** Find the equation of the line through $(4, -1)$ perpendicular to the line $2x + 3y - 6 = 0$. [3]

- B4** The height in centimetres of a burning candle after t hours is modelled by $H = 30 - 2.5t$. Interpret the numbers 30 and 2.5, find when the height is 10 cm, and state when the model must stop applying. [3]

SECTION C · Stretch

- C1** The line through $(2, k)$ and $(5, 7)$ has gradient 3. Find the value of k . [2]

- C2** A vertical line and a horizontal line are perpendicular, yet the rule $m_1m_2 = -1$ cannot be applied to them. Explain why not. [2]