



QUESTION WORKBOOK

Simultaneous equations and inequalities

Algebra and functions · Year 12–13

8 questions · 33 marks

NAVY SCREEN EDITION

SECTION A · Warm-up

A1 Solve the simultaneous equations $2x + y = 7$ and $x - y = 2$. [3]

A2 Solve the inequality $x^2 - x - 12 < 0$. [3]

SECTION B · Standard

B1 Find the coordinates of the points of intersection of the line $y = x + 1$ and the curve $y = x^2 - 3x + 4$. [5]

B2 The line $y = 2x + c$ is a tangent to the curve $y = x^2$. Find the value of c . [4]

B3 Solve the inequality $2/x > 1$. [4]

B4 Find the set of values of x for which $x^2 + 2x - 15 \geq 0$, giving your answer in set notation. [3]

SECTION C · Stretch

C1 Solve the simultaneous equations $x^2 + y^2 = 25$ and $y = 2x - 5$. [5]

C2 Find the set of values of k for which the line $y = kx - 3$ does not intersect the curve $y = x^2 + x + 1$. [6]