



QUESTION WORKBOOK

Graphs, proportion and transformations

Algebra and functions · Year 12–13

7 questions · 20 marks

PRINT EDITION

SECTION A · Warm-up

- A1** The curve $y = (x - 1)(x + 2)^2$ is to be sketched. State where it crosses the x-axis, where it touches it, and its y-intercept. [2]

- A2** y is directly proportional to x^2 , and $y = 12$ when $x = 2$. Find y when $x = 5$. [2]

SECTION B · Standard

- B1** y is inversely proportional to x , and $y = 8$ when $x = 3$. Find y when $x = 6$, and state the equations of the asymptotes of the graph of y against x . [3]

- B2** Describe the difference between the transformations taking $y = f(x)$ to $y = f(x) + 2$ and to $y = f(x + 2)$. [3]

- B3** The curve $y = f(x)$ passes through $(4, 3)$. Find the corresponding point on $y = f(x - 2) + 5$. [3]

- B4** The curve $y = f(x)$ passes through $(4, 3)$. Find the corresponding point on $y = 2f(x)$, and on $y = f(2x)$. [3]

SECTION C · Stretch

- C1** The curve $y = 4/x$ is transformed to $y = 4/x - 1$. State the equations of the asymptotes of the new curve, and find where it crosses the x -axis. [4]