InkMaths

QUESTION WORKBOOK

Functions, inverses and the modulus

Algebra and functions · Year 12–13

7 questions · 22 marks

PRINT EDITION

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SECTION A · Warm-up

A1 With $f(x) = 3x - 1$ and $g(x) = x^2$, find $fg(2)$ and $gf(2)$. [2]

A2 With $f(x) = 3x - 1$ and $g(x) = x^2$, find $fg(x)$ and $gf(x)$ in general. [2]

SECTION B · Standard

B1 Find the inverse of $f(x) = x^2 - 3$ with domain $x \geq 0$, stating the domain of the inverse. [4]

B2 Find the inverse of $f(x) = (2x + 1)/5$. [3]

B3 Solve $|3x - 2| = x + 4$. [4]

SECTION C · Stretch

C1 Explain why $f(x) = x^2$ with domain all real numbers has no inverse, and state a restriction of the domain that repairs this. [3]

C2 Solve $|2x + 1| = |x - 4|$. [4]