

Inverse of a composite function

Grade 9 | Higher | 9 questions, 40 marks

GCSE Maths topic practice



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1 $f(x) = 2x + 1$ and $g(x) = x - 4$

Find $(fg)^{-1}(x)$.

(3 marks)

Answer _____

2 $f(x) = 3x - 2$ and $g(x) = x + 5$

Show that $(fg)^{-1}(x) = g^{-1}f^{-1}(x)$.

(4 marks)

Answer _____

3 $f(x) = x + 3$ $g(x) = 4x$

a. Find $fg(x)$

b. Find $(fg)^{-1}(x)$

c. Find $(fg)^{-1}(11)$

(4 marks)

Answer _____

4

$$f(x) = 5x - 3 \quad g(x) = \frac{x+1}{2}$$

a. Find $gf(1)$ b. Find $g^{-1}f(2)$

(4 marks)

Answer _____

5

$$f(x) = \frac{2x+1}{x-3}, x \neq 3$$

a. Show that $f^{-1}(x) = \frac{3x+1}{x-2}$ b. $g(x) = x + 4$ Solve $fg(x) = 5$

(6 marks)

Answer _____

6 $f(x) = x + 2$ $g(x) = x^2 - 3x$

a. Find $fg(1)$

b. Find $f^{-1}(x)$

c. Solve $gf(x) = 10$

(7 marks)

Answer _____

7 $f(x) = \frac{1}{x+2}$ for $x \neq -2$ and $g(x) = 3x - 1$

Find $(fg)^{-1}(x)$.

(4 marks)

Answer _____

8 $f(x) = x^2 + 3$ for $x \geq 0$ and $g(x) = 2x - 1$ for $x \geq 1$.

Find $(fg)^{-1}(x)$.

(4 marks)

Answer _____

9

$$f(x) = 3x - 4 \quad \text{and} \quad g(x) = x^2 - 2$$

Solve $f^{-1}(x) = g(x)$.

(4 marks)

Answer

End of questions | Total 40 marks