



THIRD SPACE
LEARNING

GCSE Exam Questions

Inverse Functions | Algebra

GCSE Exam Questions: Inverse Functions

1) Given that $f(x) = x - 8$, find

(a) $f^{-1}(x)$

(1)

(b) $f^{-1}(4)$

(2)

(3 marks)

2) Given that $f(x) = \frac{x + 8}{5}$, find

(a) $f^{-1}(x)$

(2)

(b) $f^{-1}(10)$

(2)

(4 marks)

GCSE Exam Questions: Inverse Functions

3) Functions f and g are defined by $f(x) = 3x + 5$ and $g(x) = 2x + 4$.

(a) Find $f^{-1}(x)$

(2)

(b) Find $g^{-1}(x)$

(2)

(c) Find the value of x when $f^{-1}(x) = g^{-1}(x)$

(3)
(7 marks)

4) The function f is such that $f(x) = 4x - 7$.

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

(2)

(b) Solve $f^{-1}(x) = 15$.

(3)
(5 marks)

GCSE Exam Questions: Inverse Functions Answers

	Question	Answer	Marks
1)	Given that $f(x) = x - 8$.		
(a)	Find $f^{-1}(x)$	(a) $f^{-1}(x) = x + 8$	(1)
(b)	Find $f^{-1}(4)$	(b) $4 + 8$ 12	(1) (1)
2)	Given that $f(x) = \frac{x + 8}{5}$		
(a)	Find $f^{-1}(x)$	(a) $5x$ seen $f^{-1}(x) = 5x - 8$	(1) (1)
(b)	Find $f^{-1}(10)$	(b) $5 \times 10 - 8$ 42	(1) (1)
3)	Functions f and g are defined by $f(x) = 3x + 5$ and $g(x) = 2x + 4$.		
(a)	Find $f^{-1}(x)$	(a) $x - 5$ seen $f^{-1}(x) = \frac{x - 5}{3}$	(1) (1)
(b)	Find $g^{-1}(x)$	(b) $x - 4 = 2y$ oe $g^{-1}(x) = \frac{x - 4}{2}$	(1) (1)
(c)	Find the value of x when $f^{-1}(x) = g^{-1}(x)$	(c) $\frac{x - 5}{3} = \frac{x - 4}{2}$ $2(x - 5) = 3(x - 4)$ $2x - 10 = 3x - 12$ $x = 2$	(1) (1) (1)
4) (a)	The function f is such that $f(x) = 4x - 7$. Find $f^{-1}(x)$.	(a) $x + 7$ seen $f^{-1}(x) = \frac{x + 7}{4}$	(1) (1)
(b)	Solve $f^{-1}(x) = 15$.	(b) $\frac{x + 7}{4} = 15$ $x + 7 = 60$ $x = 53$	(1) (1) (1)

Where to go next?

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