

GCSE MATHS • GRADE 7

MATHS



EXAM QUESTION PACK

FUNCTIONS

SCORE

/92

PERCENTAGE

%

STEMUP

- 1** $f(x) = 5x - 5$
(a) Find $f(-2)$.
(b) Find $f(4)$.

/ 1

- 2** $f(x) = -2x - 5$
Solve $f(x) = -1$.

/ 1

- 3** $f(x) = 2x - 8$
 $g(x) = x^2 - 6x + 9$
Find $gf(-3)$.

/ 1

- 4** $f(x) = -2x - 4$
(a) Find $f(5)$.
(b) Find $f(6)$.

/ 1

- 5** $g(x) = 4x - 2$
Solve $g(x) = 10$.

/ 1

- 6** $f(x) = 6x + 1$
 $g(x) = x^2 + 10$
Find $fg(3)$.

/ 1

- 7 $g(x) = 6x + 4$
(a) Find $g(-4)$.
(b) Find $g(-1)$.

/ 1

- 8 $f(x) = 6x + 7$
Find $f^{-1}(x)$.

/ 1

- 9 $f(x) = 4x - 9$
Find $f^{-1}(8)$.

/ 1

10 $f(x) = x^2 - 6x - 1$

(a) Find $f(5)$.

(b) Find $f(-1)$.

/ 1

11 $f(x) = 4x + 2$

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

/ 1

12 $f(x) = 2x + 3$

Find $f^{-1}(11)$.

/ 1

- 13** $g(x) = 2x^2 + 1$
Solve $g(x) = 73$.

/ 1

- 14** $f(x) = 6x + 8$
Find $f^{-1}(x)$.

/ 1

- 15** $f(x) = -2x - 3$
Find $ff(x)$.
Give your answer in its simplest form.

/ 1

- 16** $h(x) = 2x + 9$
(a) Find $h(3)$.
(b) Find $h(-3)$.
(c) Solve $h(x) = 7$.

/ 1

- 17** $f(x) = -x - 4$
Solve $f^{-1}(x) = 4$.

/ 1

- 18** $f(x) = -2x - 1$
(a) Find $f(7)$.
(b) Find $f(-1)$.
(c) Solve $f^{-1}(x) = 2$.

/ 1

- 19** $f(x) = 4x + 3$
(a) Find $f(3)$.
(b) Find $f(-3)$.
(c) Solve $f(x) = -9$.

/ 1

- 20** $f(x) = 2x + 1$
Solve $f^{-1}(x) = -3$.

/ 1

- 21** $f(x) = x - 2$
(a) Find $f(4)$.
(b) Find $f(-1)$.
(c) Solve $f^{-1}(x) = 2$.

/ 2

- 22 $f(x) = 6 \div (x + 3)$
(a) Find $f(3)$.
(b) Solve $f(x) = 3$.

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 / 2

- 23 $f(x) = x^2 + 3$ for $x \geq 0$
Solve $f^{-1}(x) = 8$.

.....
 / 2

- 24 $f(x) = -x + 1$
 $g(x) = 2x^2 + 8$
Find an expression for $fg(x)$.
Give your answer in its simplest form.

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 / 2

- 25 $f(x) = 12 \div (x + 3)$
(a) Find $f(1)$.
(b) Solve $f(x) = 12$.

.....
 / 2

- 26 $f(x) = 2x^2 - 3$
(a) Find $f(2)$.
(b) Find $f(-2)$.
(c) Solve $f(x) = 47$.

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 / 2

- 27 $f(x) = 3x^2 + 9$
 $g(x) = 5x + 6$
Find an expression for $gf(x)$.
Give your answer in its simplest form.

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 / 2

- 28** $f(x) = 12 \div (x - 3)$
(a) Find $f(9)$.
(b) Solve $f(x) = 12$.

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 / 2

- 29** $f(x) = 5x$
 $g(x) = kx^2$ where k is a constant
Given that $fg(1) = 20$, work out the value of k .

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 / 2

- 30** $f(x) = 6x + 5$
 $g(x) = x^2 + 10$
Solve $f(x) = g(x)$.

.....
 / 2

- 31** $g(x) = x^3 - 8$
(a) Find $g(2)$.
(b) Find $g(-2)$.
(c) Solve $g^{-1}(x) = 5$.

/ 2

- 32** $f(x) = 2x + 8$
 $g(x) = kx^2$ where k is a constant
Given that $fg(2) = 40$, work out the value of k .

/ 2

- 33** $f(x) = 4x + 6$
 $g(x) = x^2 + 1$
Solve $f(x) = g(x)$.

/ 2

34 $g(x) = x^2 - 4$ for $x \geq 0$

(a) Find $g(8)$.

(b) Find $g(7)$.

(c) Solve $g^{-1}(x) = 3$.

/ 2

35 $f(x) = 5x - 3$

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

$g(x) = kx^2$ where k is a constant

(b) Given that $fg(2) = 12$, work out the value of k .

/ 2

36 $f(x) = x^2 - 9$

(a) Find an expression for $f(x + 1)$.

(b) Hence solve $f(x + 1) = 0$.

/ 2

- 37 $f(x) = 5x - 3$
 $g(x) = kx^2$ where k is a constant
Given that $gf(3) = 576$, work out the value of k .

/ 2

- 38 $f(x) = -4x + 4$
(a) Find $f^{-1}(x)$.
 $g(x) = kx^2$ where k is a constant
(b) Given that $fg(1) = -20$, work out the value of k .

/ 2

- 39 $f(x) = x^2 - 16$
(a) Find an expression for $f(x + 4)$.
(b) Hence solve $f(x + 4) = 0$.

/ 3

- 40 $f(x) = 5x - 6$
 $g(x) = -x + 5$
Find $gf^{-1}(-11)$.

/ 3

- 41 $f(x) = -4x + 2$
 $g(x) = -5x - 8$
(a) Find $gf(4)$.
(b) Find an expression for $f^{-1}(x)$.
(c) Solve $f(x) = g(x)$.

/ 3

- 42 $f(x) = -2x + 2$
 $g(x) = x^2$
Solve $fg(x) = gf(x)$.

/ 3

- 43 $f(x) = -4x + 2$
 $g(x) = 4x + 1$
Find $gf^{-1}(-10)$.

/ 3

- 44 $f(x) = -3x - 4$
 $g(x) = -4x - 9$
(a) Find $gf(5)$.
(b) Find an expression for $f^{-1}(x)$.
(c) Solve $f(x) = g(x)$.

/ 3

- 45 $f(x) = -2x + 5$
 $g(x) = -x - 8$
Solve $f^{-1}(x) = g^{-1}(x)$.

/ 3

46 $f(x) = 2x - 3$

$g(x) = 3x^2$

(a) Find an expression for $fg(x)$.

(b) Find an expression for $gf(x)$.

(c) Solve $fg(x) = gf(x)$.

/ 3

47 $f(x) = x^2 - 14$ for $x \geq 0$

$g(x) = x + 6$

(a) Find an expression for $g^{-1}(x)$.

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

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

/ 3

48 $f(x) = x + 9$

$g(x) = -4x - 1$

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

/ 3

49 $f(x) = 3x + 1$

$g(x) = x^2$

(a) Find an expression for $fg(x)$.

(b) Find an expression for $gf(x)$.

(c) Solve $fg(x) = gf(x)$.

/ 3

50 $f(x) = x^2 - 28$ for $x \geq 0$

$g(x) = x + 2$

(a) Find an expression for $g^{-1}(x)$.

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

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

/ 3