EXAM PAPERS PRACTICE

GCSE OCR Math J560

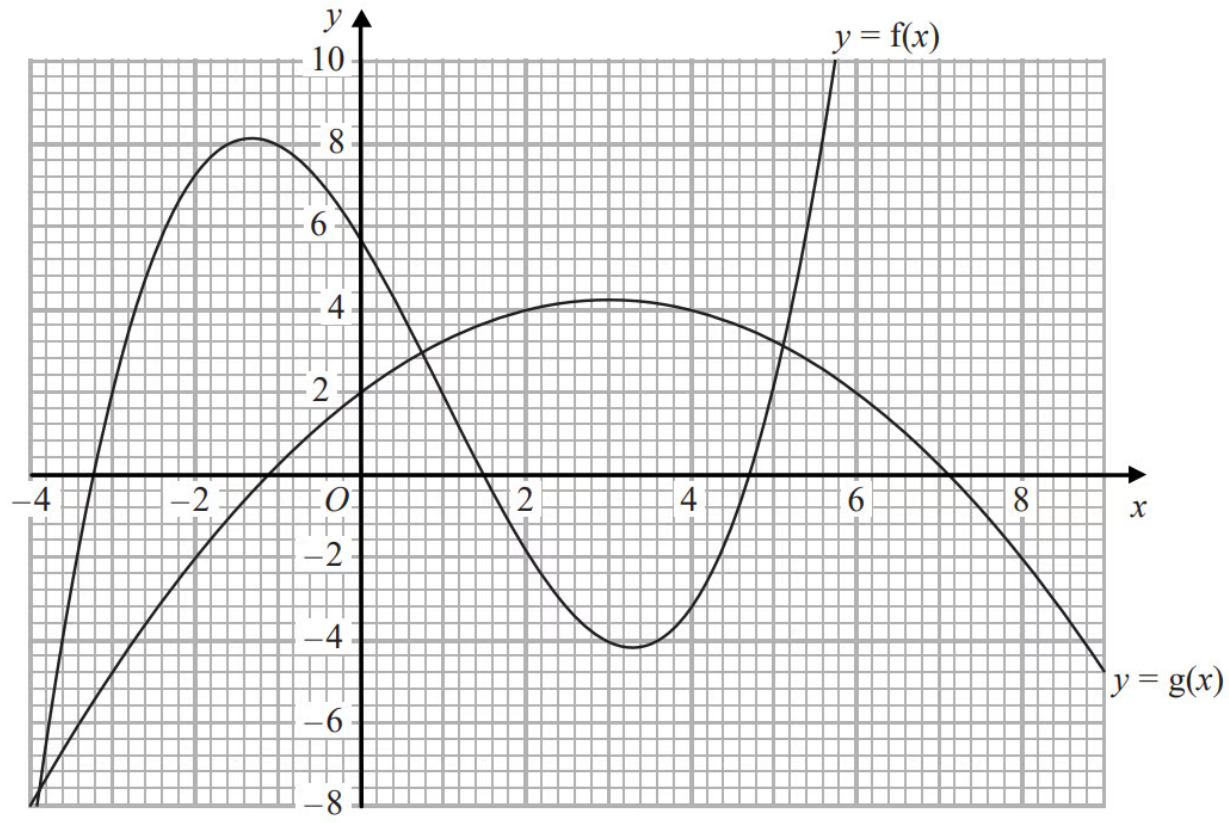
Functions

Question Paper

"We will help you to achieve A Star "

Question 1

The diagram shows parts of the graphs of $y = f(x)$ and $y = g(x)$.



(a) Find g(0)

[1 mark]

Question 2

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

(a) State one value of x which cannot be included in any domain of f.

[1 mark]

Question 3

(c) $g(a) = -2$

Work out the value of a.

[2 marks]

Question 4

The function g is defined as $g(x) = 5 + x$

(c) Given that $g(a) = 7$, find the value of a.

[1 mark]

Question 5

g is the function $g(x) = x^2 - 25$

(c) Find $g(-3)$

[1 mark]

Question 6

The functions f and g are defined as

$$f(x) = \frac{1}{2}x + 4$$

$$g(x) = \frac{2x}{x+1}$$

(a) Work out f(6)

[1 mark]

Question 7

g is a function such that

$g(x) = \sqrt{x-1} \quad x \geqslant 1$

(b) Find $fg(x)$
Give your answer as simply as possible.

[2 marks]

Question 8

$f(x) = 3x^2 - 2x - 8$

Express $f(x + 2)$ in the form $ax^2 + bx$

[3 marks]

Question 9

f is a function such that

$f(x) = \dfrac{1}{x^2 + 1}$

(a) Find $f(\frac{1}{2})$

[1 mark]

Question 10

The function f is such that

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

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

[2 marks]

Question 11

$$f(x) = \frac{2}{x}$$

$$g(x) = \frac{x+1}{x}$$

(a) State which value of x cannot be included in the domain of f or g.

[1 mark]

Question 12

$$f(x) = \sqrt{x-6}$$

(a) Find f(10)

...

[1 mark]

Question 13

(a) Show that $\frac{x^2 + 3x}{2x^2 + 5x - 3}$ can be written as $\frac{x}{kx - 1}$

State the value of k.

[2 marks]

Question 14

The functions g and h are defined as

$$g(x) = \frac{x}{2x - 5}$$

$$h(x) = x + 4$$

(a) Find the value of g(1)

[1 mark]

Question 15

$$f(x) = \frac{2x}{x-1}$$

(a) Find the value of f(11)

[1 mark]