Functions

Question Paper

Course	CIE IGCSE Maths
Section	Algebra & Sequences
Topic	Functions
Difficulty	Medium

Time allowed: 30

Score: /21

Percentage: /100

Question 1

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

The domain of $f(x)$ is $\{-3, 0, 2\}$.

Find the range of $f(x)$.

{ ....} [2]

[2 marks]

Question 2a

$$f(x) = 7x - 4 \quad g(x) = \frac{2x}{x-3}, \; x \neq 3 \quad h(x) = x^2$$

Find $g(6)$.

[1 mark]

Question 2b

Find $fg(4)$.

[2 marks]

Question 2c

Find $fh(x)$.

[1 mark]

Question 3

$$f(x) = 7 - 2x \qquad g(x) = \frac{10}{x}, \; x \neq 0 \qquad h(x) = 27^x$$

Find

i)
$f(-3)$,

[1]

ii)
$hg(30)$,

[2]

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

$f^{-1}(x) = $ .... [2]

[5 marks]

Question 4a

$$f(x) = \frac{3}{x+2}, \; x \neq -2 \qquad g(x) = 8x - 5$$

Work out $g\left(\dfrac{1}{4}\right)$.

[1 mark]

Question 4b

Work out $ff(2)$.

[2 marks]

Question 4c

Find $gg(x)$, giving your answer in its simplest form.

[2 marks]

Question 4d

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

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

[2 marks]

Question 5a

f and g are functions such that

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

Find $f(-5)$

[1 mark]

Question 5b

Find $fg(1)$.

[2 marks]