

# Functions

## Difficulty: Easy

### Question Paper 1

Level	IGCSE
Subject	Maths (0580/0980)
Exam Board	CIE
Topic	Algebra and graphs
Sub-Topic	Functions
Paper	Paper 2
Difficulty	Easy
Booklet	Question Paper 1

**Time allowed:** 36 minutes

**Score:** /28

**Percentage:** /100

#### Grade Boundaries:

##### CIE IGCSE Maths (0580)

A*	A	B	C	D	E
>88%	76%	63%	51%	40%	30%

##### CIE IGCSE Maths (0980)

9	8	7	6	5	4	3
>94%	85%	77%	67%	57%	47%	35%

## Question 1

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

$$g(x) = 6x + 7$$

Find, in its simplest form,

(a)  $f(3x)$ ,

[1]

(b)  $fg(x)$ .

[2]

## Question 2

$$f(x) = x^3$$

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

$$h(x) = 2x + 1$$

Work out

(a)  $ff(2)$ ,

[2]

(b)  $gh(x)$  and simplify your answer,

[2]

(c)  $h^{-1}(x)$ , the inverse of  $h(x)$ .

[2]

### Question 3

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

$$g(x) = x^2$$

(a) Find  $fg(-2)$ .

[2]

(b) Find  $gf(x)$ , in terms of  $x$ , in its simplest form.

[2]

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

[2]

## Question 4

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

(a) Find  $gf(2)$ . [2]

(b) Solve  $g(x) = 10$ . [2]

(c) Simplify. [3]

$$f(2x) - f(x+2)$$

## Question 5

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

$$g(x) = \frac{x-1}{4}$$

$$h(x) = x^3$$

Find

(a)  $hf(1)$ , [2]

(b)  $g^{-1}(x)$ , [2]

(c)  $gh(x)$ , [1]

(d) the solution to the equation  $f(x) = 0$ . [1]