Functions
Difficulty: Easy

Question Paper 3

Level	IGCSE
Subject	Maths (0580/0980)
Exam Board	CIE
Topic	Algebra and graphs
Sub-Topic	Functions
Paper	Paper 2
Difficulty	Easy
Booklet	Question Paper 3

Time allowed: **40 minutes**

Score: **/31**

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%

$f(x) = x^2 + 1$ $\quad g(x) = \dfrac{x+2}{3}$

(a) Work out ff(-1).

[2]

(b) Find gf($3x$), simplifying your answer as far as possible.

[3]

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

[2]

Question 2

$f(x) = 3x + 5 \qquad g(x) = 4x - 1$

(a) Find the value of gg(3).

[2]

(b) Find fg(x), giving your answer in its simplest form.

[2]

(c) Solve the equation.

$$f^{-1}(x) = 11$$

[1]

Question 3

$$f(x) = \frac{1}{x+4} \quad (x \neq -4)$$

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

$$h(x) = x^3 + 1$$

(a) Work out fg(1). [2]

(b) Find $h^{-1}(x)$. [2]

(c) Solve the equation $g(x) = -2$. [3]

Question 4

$f(x) = x^3$ $\quad\quad$ $g(x) = 2x - 3$

(a) Find

(i) g(6), [1]

(ii) f(2x). [1]

(b) Solve $fg(x) = 125$. [3]

(c) Find the inverse function $g^{-1}(x)$. [2]

Question 5

$f(x) = x^2$ $\quad$ $g(x) = 2^x$ $\quad$ $h(x) = 2x - 3$

(a) Find g(3). [1]

(b) Find hh(x) in its simplest form. [2]

(c) Find fg(x + 1) in its simplest form. [2]