Higher Mathematics

Inverse Functions - **Questions** - 2013-2019

Marks are indicated in brackets after each question number

2015 Paper 1 Question 5, (2) (1)

A function g is defined on $\mathbb{R}$, the set of real numbers, by $g(x) = 6 - 2x$.

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

(b) Write down an expression for $g(g^{-1}(x))$.

2016 Paper 1 Question 6, (3) (1)

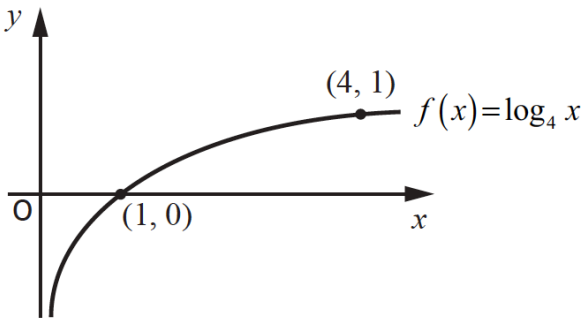
Functions f and g are defined on $\mathbb{R}$, the set of real numbers.
The inverse functions f^{-1} and g^{-1} both exist.

(a) Given $f(x) = 3x + 5$, find $f^{-1}(x)$.

(b) If $g(2) = 7$, write down the value of $g^{-1}(7)$.

2016 Paper 1 Question 10, (2)

The diagram below shows the graph of the function $f(x) = \log_4 x$, where $x > 0$.



The inverse function, f^{-1}, exists.
On the diagram in your answer booklet, sketch the graph of the inverse function.

2017 Paper 1 Question 6, (3)

A function, h, is defined by $h(x) = x^3 + 7$, where $x \in \mathbb{R}$.

Determine an expression for $h^{-1}(x)$.

2018 Paper 1 Question 2, (3)

A function $g(x)$ is defined on $\mathbb{R}$, the set of real numbers, by

$$g(x) = \frac{1}{5}x - 4.$$

Find the inverse function, $g^{-1}(x)$.

2019 Paper 2 Question 8, (3) (1)

A function, f, is given by $f(x) = \sqrt[3]{x} + 8$.

The domain of f is $1 \leq x \leq 1000$, $x \in \mathbb{R}$.

The inverse function, f^{-1}, exists.

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

(b) State the domain of f^{-1}.