

# PRINTABLE VERSION

## Quiz 15

### Question 1

Which of the following functions is one-to-one?

- a)   $f(x) = (x + 10)^3 + 9$
- b)   $f(x) = (x + 10)^2 + 9$
- c)   $f(x) = (x - 10)^2 - 9$
- d)   $f(x) = x^2 - 10$
- e)   $f(x) = -|x| + 10$
- f)  None of the above

### Question 2

Which of the following functions is one-to-one?

- a)   $f(x) = x^2$
- b)   $f(x) = -|x| + 2$
- c)   $f(x) = x^2 - 1$
- d)   $f(x) = \sqrt{x}$
- e)   $f(x) = |x|$
- f)  None of the above

### Question 3

Let  $g$  be a one-to-one function and suppose  $f$  is the inverse function of  $g$ .  
If  $g(8) = 11$  and  $g(9) = 8$ , find  $f(8)$ .

- a)  11
- b)  9
- c)  8

- d)   $-9$
- e)   $-8$
- f)  None of the above

**Question 4**

Suppose  $f(x) = 8x + 11$ . Let  $g$  be the inverse function of  $f$ . Find  $g(x)$ .

- a)   $g(x) = 8x + 11$
- b)   $g(x) = \frac{x - 11}{8}$
- c)   $g(x) = \frac{x + 88}{8}$
- d)   $g(x) = \frac{-x - 88}{8}$
- e)   $g(x) = -8x - 11$
- f)  None of the above

**Question 5**

The function  $f$  is given below. Suppose  $g$  is the inverse function of  $f$ . Find  $g(x)$ .

$$f(x) = \frac{11}{x - 5}$$

- a)   $\frac{x + 55}{5}$
- b)   $5x + 11$
- c)   $\frac{5x + 11}{x}$
- d)   $\frac{-x - 55}{5}$
- e)   $\frac{5x - 11}{x}$
- f)  None of the above

**Question 6**

The function  $f$  is given below. Let  $g$  be the inverse of  $f$ . Find  $g(x)$ .

$$f(x) = x^3 + 5$$

- a)   $g(x) = \sqrt[3]{x+5}$
- b)   $g(x) = \sqrt[3]{x} + \sqrt[3]{5}$
- c)   $g(x) = (x+5)^3$
- d)   $g(x) = \sqrt[3]{x-5}$
- e)   $g(x) = x+5$
- f)  None of the above

### Question 7

Given  $f(x) = \sqrt[3]{x-4}$ , find its inverse if possible.

- a)   $f^{-1}(x) = x^3 + 4$
- b)  No inverse
- c)   $f^{-1}(x) = x^3 + 16$
- d)   $f^{-1}(x) = -x^3 + 4$
- e)   $f^{-1}(x) = x^3 - 4$
- f)  None of the above

### Question 8

A table of values for an one-to-one function  $f$  is given as follows. Compute  $f^{-1}(3)$ .

$x$	3	2	-4	5	0	6
$f(x)$	-4	7	5	0	3	1

- a)   $f^{-1}(3) = 6$
- b)   $f^{-1}(3) = 3$
- c)   $f^{-1}(3) = 5$
- d)   $f^{-1}(3) = -4$

- e)   $f^{-1}(3) = 0$
- f)  None of the above

**Question 9**

Find the inverse of

$$f(x) = \frac{-8x - 3}{2x + 1}$$

- a)   $f^{-1}(x) = \frac{x + 3}{2x - 8}$
- b)   $f^{-1}(x) = \frac{x - 3}{2x + 8}$
- c)   $f^{-1}(x) = \frac{-x + 3}{2x - 8}$
- d)   $f^{-1}(x) = \frac{-x - 3}{2x + 8}$
- e)   $f^{-1}(x) = \frac{-x - 3}{2x - 8}$
- f)  None of the above

**Question 10**

Find the inverse of  $f$ , if possible.

$$f(x) = -125(x - 7)^3 - 1$$

- a)   $f^{-1}(x) = -\frac{1}{5}\sqrt[3]{x + 1}$
- b)   $f^{-1}(x) = \frac{1}{5}\sqrt[3]{x + 1} + 7$
- c)   $f^{-1}(x) = -\frac{1}{5}\sqrt[3]{x + 1} + 7$
- d)   $f^{-1}(x) = \frac{1}{5}\sqrt[3]{x - 7} - 1$
- e)   $f^{-1}(x) = -\frac{1}{5}\sqrt[3]{x - 7} - 1$
- f)  None of the above