



### QUESTION 1

For the function  $y = 3\theta + \cos\theta$  the independent variable is

z

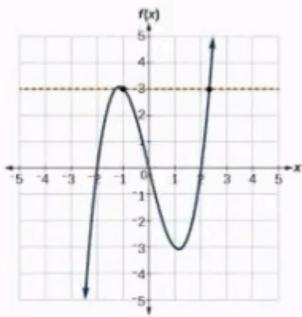
y

$\theta$

x

### QUESTION 2

The following curve represents a function



True

False

### QUESTION 3

For  $x \in \mathbb{R}$ ,

$$|x+7|$$

$\leq x+7$

$\geq x+7$

$\geq |x|+7$

$\leq |x|+7$

$$|a+b| \leq |a|+|b|$$

$$|x+7| \leq |x|+7$$

#### QUESTION 4

For  $x < 0$ ,

$$|4x| =$$

$-|x|$

$4x$

$-4x$

$|x|$

#### QUESTION 5

The domain of the function  $f(x) = \frac{3x}{2x-4}$  is

$\mathbb{R}/\{-4\}$

$\mathbb{R}/\{4\}$

$\mathbb{R}/\{2\}$

$\mathbb{R}/\{-2\}$

$$2x - 4 \neq 0$$

$$2x \neq 4$$

$$x \neq 2$$

#### QUESTION 6

The domain of the function  $f(x) = \frac{3}{\sqrt{x-3}}$  is

$(-\infty, 3)$

$(3, \infty)$

$(-\infty, 3]$

$[3, \infty)$

$$x - 3 > 0$$

$$x > 3$$

### QUESTION 7

The range of the function  $f(x) = |2x - 1| + 7$  is

- $(7, \infty)$
- $(-\infty, 7]$
- $(-\infty, 7)$
- $[7, \infty)$

$$\text{domain} = (-\infty, +\infty)$$

$$|2x - 1| \geq 0$$

$$|2x - 1| + 7 \geq 0 + 7$$

$$|2x - 1| + 7 \geq 7$$

### QUESTION 1

If  $f(x) = x - 3$  and  $g(x) = \sqrt{x - 3}$  then the domain of  $fg(x)$  is

- {3}
- $[3, \infty)$
- $\mathbb{R}$
- $(3, \infty)$

$$f(g(x)) = f(\sqrt{x-3}) = \sqrt{x-3} - 3$$

$$D_g = x - 3 \geq 0 = x \geq 3 \\ = [3, +\infty)$$

$$D_{f \circ g} = x - 3 \geq 0 = x \geq 3 \\ = [3, +\infty)$$

$$D = D_g \cap D_{f \circ g} = [3, +\infty) \cap [3, +\infty) \\ = [3, +\infty)$$

### QUESTION 2

If  $f(x) = \sqrt{x - 7}$  and  $g(x) = x^2$  then  $(f \circ g)(x) =$

- $(x - 7)^2$
- $x - 7$
- $\sqrt{x^2 - 7}$
- $\sqrt{x - 7}$

$$f(g(x)) = f(x^2) = \sqrt{x^2 - 7}$$

### QUESTION 3

If  $f(x) = \sqrt{x + 7}$  and  $g(x) = x^2$  then the domain of  $(f \circ g)(x) =$

- $[7, \infty)$
- $\mathbb{R}$
- $[-7, \infty)$
- $(-7, \infty)$

$$f(g(x)) = f(x^2) = \sqrt{x^2 + 7}$$

$$D_g = (-\infty, +\infty)$$

$$D_{f \circ g} = (-\infty, +\infty)$$

