



# Quiz 1

1) If  $f(x) = \sqrt{x+8}$  and  $g(x) = -\sqrt{x+8}$  then the domain of  $\frac{f}{g}(x)$  is

a)  $\mathbb{R}$

b)  $(-8, +\infty)$

c)  $[-8, +\infty)$

d)  $\{-8\}$

$$D_f = x+8 \geq 0 \rightarrow x \geq -8 = [-8, +\infty)$$

$$D_g = x+8 \geq 0 \rightarrow x \geq -8 = [-8, +\infty)$$

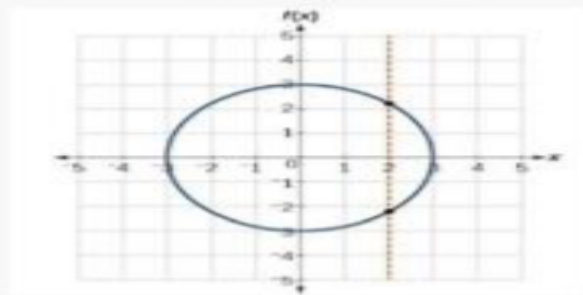
$$\frac{f(x)}{g(x)} = \frac{\sqrt{x+8}}{-\sqrt{x+8}}$$

$$x+8 \neq 0 \rightarrow x \neq -8$$

$$D_{f/g} = (-8, +\infty)$$

1 درجة من 1 درجة

The following curve represents a function



a) True

b) false

## Question 2

1 points

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If  $f(x) = \frac{3x}{x-1}$  then  $f^{-1}(x) =$

$\frac{x}{x+3}$

$\frac{-x}{x+3}$

$\frac{-x}{x-3}$

$\frac{x}{x-3}$

$$Y = \frac{3x}{x-1}$$

$$Yx - Y = 3x \rightarrow -Y = 3x - Yx$$

$$-Y = x(3 - Y)$$

$$x = \frac{-Y}{3 - Y}$$

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

$$= \frac{x}{x - 3}$$

3) For  $x \in \mathbb{R}$ ,  
 $\left| \frac{x}{3} \right| =$

a)  $\frac{x}{|3|}$

b)  $\frac{-x}{3}$

c)  $\frac{x}{3}$

d)  $\frac{|x|}{3}$

4) For the function  $y = 3\theta + \cos\theta$  the dependent variable is

a)  $y$

b)  $\theta$

c) none

5) For  $x \in \mathbb{R}$ ,  
 $|x+7|$

a)  $|x+7|$

b)  $|x|+7$

c)  $x+|7|$

6) For  $x < 0$ ,  
 $|4x| =$

$= -4x$

The domain of the function  $f(x) = \sqrt{x+1}$  is

$x+1 \geq 0 \rightarrow x \geq -1 = [-1, +\infty)$

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

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

The range of the function  $f(x) = (x+1)^2 + 4$  is

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

$$x^2 + 2x + 1$$

Range:

$$x^2 + 2x + 5$$

$$f\left(\frac{-b}{2a}\right) \rightarrow a=1, b=2 \rightarrow f\left(\frac{-2}{2(1)}\right) = -1$$

$$f(-1) = (-1^2 + 2(-1) + 5) = 1 - 2 + 5 = 4$$

$$R_f = [4, +\infty)$$