

**Precalculus**  
**Quiz-Functions**

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Name Key  
Date \_\_\_\_\_

Answer each of the following to the best of your ability. (Show all work on quiz)

1) Identify the domain of each

a)  $f(x) = \frac{2x}{x-7}$

$\{x \mid x \neq 7\}$

b)  $g(x) = -2x^2 - 4x + 1$

$\{x \mid x \in \mathbb{R}\}$

c)  $g(x) = \sqrt{5-x}$

$\{x \mid x \leq 5\}$

d)  $f(x) = \sqrt{16-x^2}$

$\{x \mid -4 \leq x \leq 4\}$

2) Evaluate each of the following given  $f(x) = x^2 - 4$  and  $g(x) = \frac{x+2}{x-3}$

a)  $f(-2)$

$f(-2) = (-2)^2 - 4$   
 $= 4 - 4$   
 $= 0$

b)  $g(3) = \frac{3+2}{3-3}$

$= \frac{5}{0}$   
 $= \text{und.}$

c)  $g(2y) = \frac{2y+2}{2y-3}$

d)  $f(x+2) = (x+2)^2 - 4$   
 $= x^2 + 4x$

3) Use the zero product property to solve each of the following equations.

a)  $0 = 3x^2 - 5x - 2$

$$0 = (3x + 1)(x - 2)$$

$$3x + 1 = 0 \quad x - 2 = 0$$

$$x = -\frac{1}{3} \quad x = 2$$

b)  $x^2 = 4x + 5$

$$x^2 - 4x - 5 = 0$$

$$(x - 5)(x + 1) = 0$$

$$x = 5 \quad x = -1$$

c)  $-2x^2 - 6x = 0$

$$-2x(x + 3) = 0$$

$$x = 0 \quad x = -3$$

4) Write an equation of a function that has x-intercepts at  $x = 2$  and  $x = -4$

$$(x - 2)(x + 4) = y$$

$$f(x) = x^2 + 2x - 8$$