

Functions Exit Quiz

Multiple Choice

1. If $g(x) = \frac{2x-4}{x-2}$ then $g(-4)$ is:

a.) 6

b.) -3

c.) 12

d.) 2

2. The domain of $h(x) = \frac{1}{\sqrt{x-6}}$ is:

a.) $[6, \infty)$

b.) $(6, \infty)$

c.) $[-6, \infty)$

d.) $(-6, \infty)$

3. Write each set of numbers in set-builder and interval notation.

Inequality Notation	Set-builder notation	Interval notation
$x \leq -4$		
$-5 < x \leq 1$		
$-2 \leq x \text{ or } x \geq 5$		

4. Evaluate piecewise function.

$$f(x) = \begin{cases} -x^2 + 7, & \text{if } x < -1 \\ -x^3, & \text{if } -1 < x < 5 \\ 2, & \text{if } x > 5 \end{cases}$$

$$f(-2) = ?$$

$$f(3) = ?$$

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Functions Exit Quiz

5. Find the functions value.

$$h(x) = \frac{x^2 + 2x + 4}{2x^2 - x - 1}$$

$$h(-3) = ?$$

$$h(m + 4) = ?$$

Functions Exit Quiz

ANSWERS

Multiple Choice

1. If $g(x) = \frac{2x-4}{x-2}$ then $g(-4)$ is:

a.) 6

b.) -3

c.) 12

d.) **2**

2. The domain of $h(x) = \frac{1}{\sqrt{x-6}}$ is:

a.) $[6, \infty)$

b.) **$(6, \infty)$**

c.) $[-6, \infty)$

d.) $(-6, \infty)$

3. Write each set of numbers in set-builder and interval notation, if possible.

Inequality Notation	Set-builder notation	Interval notation
$x \leq -4$	$\{x \mid x \leq -4, x \in R\}$	$(-\infty, -4]$
$-5 < x \leq 1$	$\{x \mid -5 < x \leq 1, x \in R\}$	$(-5, 1]$
$-2 \leq x \text{ or } x \geq 5$	$\{x \mid -2 \leq x \text{ or } x \geq 5, x \in R\}$	$(-\infty, -2] \cup [5, \infty)$

4. Evaluate piecewise function.

$$f(x) = \begin{cases} -x^2 + 7, & \text{if } x < -1 \\ -x^3, & \text{if } -1 < x < 5 \\ 2, & \text{if } x > 5 \end{cases}$$

$$f(-2) = ?$$

$$f(3) = ?$$

To find $f(-2)$ use $f(x) = -x^2 + 7$

$$f(-2) = -(-2)^2 + 7$$

$$f(-2) = -4 + 7$$

$$f(-2) = \mathbf{3}$$

To find $f(3)$ use $f(x) = -x^3$

$$f(3) = -3^3$$

$$f(3) = \mathbf{-27}$$

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5. Find function value.

$$h(x) = \frac{x^2 + 2x + 4}{2x^2 - x - 1}$$

$$h(-3) = ?$$

$$h(-3) = \frac{(-3)^2 + 2 * (-3) + 4}{2(-3)^2 - (-3) - 1}$$

$$h(-3) = \frac{9 + 2 * (-3) + 4}{2 * 9 - (-3) - 1}$$

$$h(-3) = \frac{9 - 6 + 4}{18 + 3 - 1}$$

$$h(-3) = \frac{3 + 4}{21 - 1}$$

$$h(-3) = \frac{7}{20}$$

$$h(m + 4) = ?$$

$$h(m + 4) = \frac{(m + 4)^2 + 2(m + 4) + 4}{2(m + 4)^2 - (m + 4) - 1}$$

$$h(m + 4) = \frac{m^2 + 8m + 16 + 2m + 8 + 4}{2(m^2 + 8m + 16) - (m + 4) - 1}$$

$$h(m + 4) = \frac{m^2 + 10m + 28}{2m^2 + 16m + 32 - m - 4 - 1}$$

$$h(m + 4) = \frac{m^2 + 10m + 28}{2m^2 + 15m + 27}$$