

# Review Worksheet

Thursday, March 14, 2019 12:22 PM



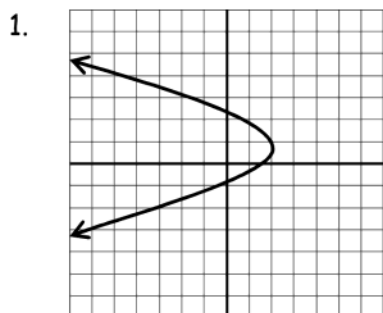
## Day 6 - Functions Domain Range and Inverses Quiz

# Functions, Domain and Range, and Inverse Functions Review

Name: \_\_\_\_\_

Block: \_\_\_\_\_ Date: \_\_\_\_\_

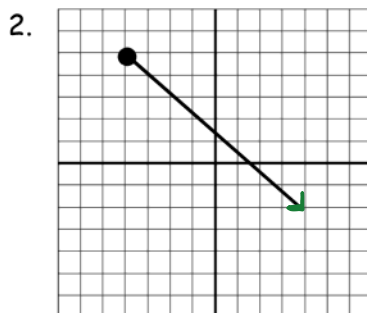
Determine if the graph is a function. If so, find the domain and range.



Function: Yes or **No**

Domain:

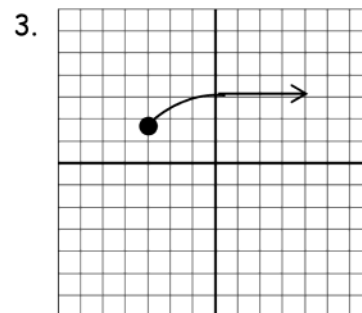
Range:



Function: **Yes** or No

Domain:  $[-4, \infty)$

Range:  $(-\infty, 5]$



Function: **Yes** or No

Domain:  $[3, \infty)$

Range:  $[2, \infty)$

Find the domain algebraically. Write all answers in interval notation.

4.  $f(x) = 3x^2 - 2x + 5$   
 $(-\infty, \infty)$

5.  $f(x) = \frac{2x}{x^2 + 3x - 4}$   
 $x^2 + 3x - 4 = 0$   
 $(x+4)(x-1) = 0$   
 $x = -4 \quad x = 1$   
 $(-\infty, -4) \cup (-4, 1) \cup (1, \infty)$

6.  $f(x) = \sqrt{x+5}$   
 $x+5 = 0$   
 $x = -5$   
 $[-5, \infty)$

7.  $f(x) = \frac{x+1}{\sqrt{x^2-9}}$   
 $x^2 - 9 = 0$   
 $(x-3)(x+3) = 0$   
 $x = 3 \quad x = -3$   
 $(-\infty, -3) \cup (3, \infty)$

Use the following functions to answer the questions. Be sure to show all of your work.

$$f(x) = x^2 - 3x + 5$$

$$g(x) = x + 4$$

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

$$8. f(2) = (2)^2 - 3(2) + 5$$

$$4 - 6 + 5$$

$$-2 + 5$$

$$3$$

$$f(2) = 3$$

$$9. (f + g)(x) = f(x) + g(x)$$

$$= x^2 - 3x + 5 + x + 4$$

$$= x^2 - 2x + 9$$

$$10. (gh)(x) = (x+4) \cdot \frac{1}{x-2}$$

$$\frac{x+4}{x-2}$$

$$11. f(g(x)) =$$

$$(x+4)^2 - 3(x+4) + 5$$

$$x^2 + 8x + 16 - 3x - 12 + 5$$

$$x^2 + 5x + 9$$

$$12. h(2) =$$

$$\frac{1}{2-2}$$

$$\frac{1}{0}$$

$$\text{undefined}$$

$$13. (g - f)(x) =$$

$$x + 4 - (x^2 - 3x + 5)$$

$$x + 4 - x^2 + 3x - 5$$

$$-x^2 + 4x - 1$$

Determine whether or not an inverse function exists. If so, find the inverse function.

$$14. f(x) = -(x-3)^2 + 5$$

~~yes~~ 
$$\text{NO}$$

$$15. g(x) = \sqrt{x-4} + 5$$

yes,

$$x = \sqrt{y-4} + 5$$

$$x - 5 = \sqrt{y-4}$$

$$(x-5)^2 = y-4$$

$$y = (x-5)^2 + 4$$

$$16. h(x) = 2x^3 - 7$$

yes

$$x = 2y^3 - 7$$

$$x - 7 = 2y^3$$

$$y^3 = \frac{x-7}{2}$$

$$y = \sqrt[3]{\frac{x-7}{2}}$$