

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

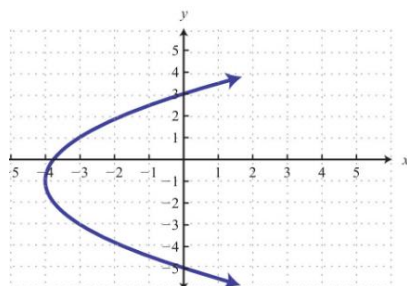
Hour: \_\_\_\_\_

### UNIT 3 REVIEW

#### Concept 1: Defining Functions

Circle yes for the following that are functions and no for the ones that are not functions:

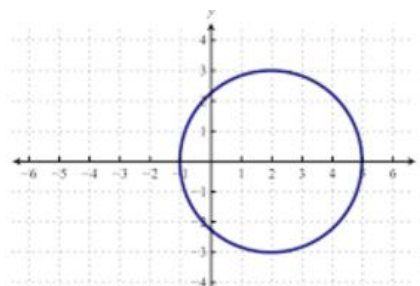
1.



Yes

No

2.



Yes

No

3.  $\{(2, 3), (3, 9), (7, 2), (9, 2)\}$

Yes

No

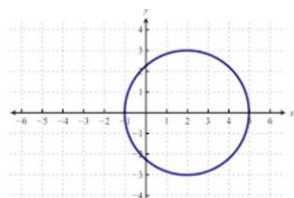
4.  $\{(2, 3), (3, 9), (7, 2), (2, 2)\}$

Yes

No

#### Concept 2: Domain and Range

5.



Domain:

Range:

6.  $\{(2, 3), (3, 9), (7, 2), (9, 2)\}$

Domain:

Range:

7. State the domain of the following:

$$y = x^2 - 4$$

Domain:

$$y = \frac{1}{x-2}$$

Domain:

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

Domain:

#### Concept 3 Writing and Evaluating Functions

Evaluating a function at the given values:

$$f(x) = x^3$$

$$g(x) = x - 3$$

$$h(x) = x^2 + 5$$

8.  $f(2)$

9.  $g(9)$

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$$f(x) = x^3$$

$$g(x) = x - 3$$

$$h(x) = x^2 + 5$$

10.  $h(x-1)$

11.  $\left(\frac{f}{g}\right)(x)$

12.  $(f+h)(x)$

13.  $(h-g)(x)$

14.  $(f \bullet g)(x)$

15.  $(f \circ g)(x)$

State if the following tables are linear, quadratic, or neither. If linear, state the equation.

16.

x	y
-8	17
-7	14
-6	11
-5	8
-4	5

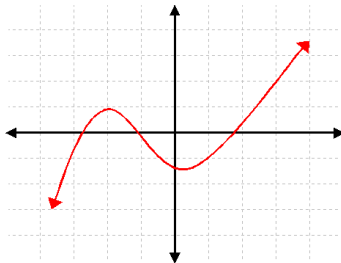
17.

x	y
-6	72
-5	50
-4	32
-3	18
-2	8

#### Concept 4: Average Rate of Change

Find the average rate of change of the given functions with the given intervals:

18.



Interval:  $[1, 3]$

Average Rate of Change:

19.  $f(x) = x^2$

Interval:  $[0, 3]$

20.  $y = x^2 - 1$

Interval:  $[-1, 2]$