

### Review Worksheet for Unit 3 Quiz #1

Name: \_\_\_\_\_ Class Period: \_\_\_\_\_

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Decide whether each relation is a function. If it is a function, state the domain and range.

1.  $\{(9,6), (5,9), (9,5), (6,4)\}$

2.  $\{(3,8), (9,7), (4,6), (8,-7)\}$

3.  $\{(1,-9), (45,6), (6,7), (7,3)\}$

5.

6.

7.

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Evaluate each of the following.

9.  $f(x) = 9 - 8x$ ; Find  $f(-7)$

10.  $h(x) = 4 + x$ ; Find  $h(-5)$

11.  $f(x) = 6 - 5x$ ; Evaluate:  $f(x + 2)$

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Use the following functions to evaluate numbers 12 – 15.

$$f(x) = 7x + 2$$

$$g(x) = 3x^2 - 2x + 4$$

$$h(x) = 5x^4$$

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

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

14.  $h(x) \cdot f(x)$

15.  $3h(x) - 3f(x)$

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Complete each function table below.

16.  $f(x) = 5x - 6$

x	$f(x)$
-1	
0	
1	
2	

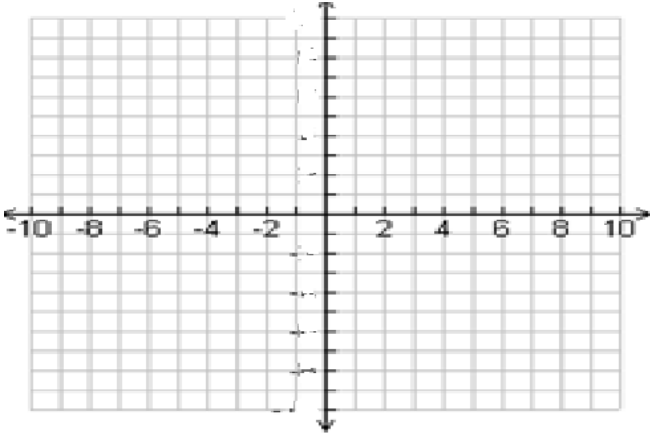
17.  $g(x) = 4x^2 + 2$

X	$g(x)$
-1	
0	
1	
2	

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8. Use the graph and table to answer the following questions.

$$f(x) = \left(\frac{1}{2}\right)^x$$



x	g(x)
-2	6
-1	4
0	2
1	0
2	-2

a)  $f(-2) = \underline{\hspace{2cm}}$ .

b)  $g(2) = \underline{\hspace{2cm}}$ .

c)  $x = \underline{\hspace{2cm}}$ , if  $f(x) = 2$

d)  $x = \underline{\hspace{2cm}}$ , if  $g(x) = 0$

e) Would the two functions ever intersect?  $\underline{\hspace{2cm}}$ . If yes, where?  $\underline{\hspace{2cm}}$

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19. When building a bridge, there are certain components that must be looked at. Let's say that we are building a bridge in the nearby town. It will cost \$6000 for all of the materials to construct the bridge. It will also cost the city \$800 for every square mile that the bridge will use.

a) Write a function to represent this information.

b) If we need 14 square miles to be able to build the bridge, how much total will it cost to build the bridge?

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Simplify the following:

20.  $4x(2x - 6) - 8(9x^2 - 3x)$

21.  $7x + 4 + 2x - 9$

22.  $-8m^2(4n + 1) - 5m(4m + 2)$

23.  $(3x^4)^2(-2xy^3)^3$

24.  $(-xy)^3(-x^2y)^4$

25.  $\frac{(-2xy^2)^3}{4x(3y)^2}$