

Grade 11 Pre-AP Functions
Quiz – Unit 1 – Function Notation, Translations, Reflections

Mr. N. Nolfi

Victim: _____

KU	APP	COM
/23	/8	/5

Modified True/False (6 KU)

State whether each statement is **true** or **false**. If false, **change** the underlined part to make the statement true.

1. T/F _____ $f(2+3) = \underline{f(2) + f(3)}$ Change: _____

2. T/F _____ If $g(3) = -1$ then $(-1, 3)$ lies of the graph of g . Change: _____

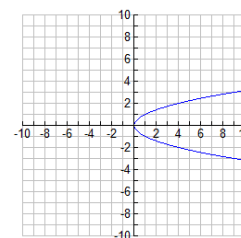
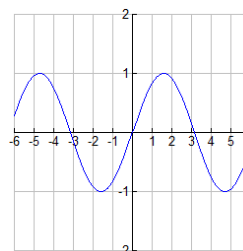
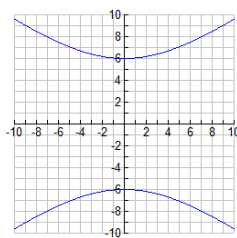
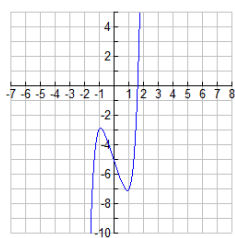
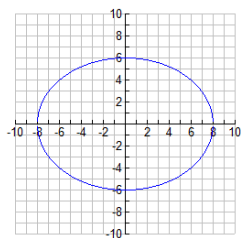
3. T/F _____ $y = h(x)$ means that the value of y is found by multiplying the value of h by the value of x . Change: _____

4. T/F _____ If $g(x) = f(x-3)$, the graph of g is obtained by translating the graph of f three units to the left. Change: _____

5. T/F _____ The graph of g is obtained by reflecting f in the y -axis, translating three to the right and shifting five units down. Therefore, $g(x) = -f(x+3) + 5$. Change: _____

6. T/F _____ The symbol $f(u)$ is read " f u." Change: _____

7. Circle the relations that are functions. (5 KU)



$$\{(0, 2), (1, 2), (2, 2)\} \quad \{(1, 1), (1, 2), (1, 3), (1, 5)\}$$

$$y = \pm\sqrt{16 - x^2}$$

$$x^2 - y^2 = 0$$

$$y = x^3 + 2x^2 - 3x + 1$$

8. Sketch a graph of the following piecewise-defined function

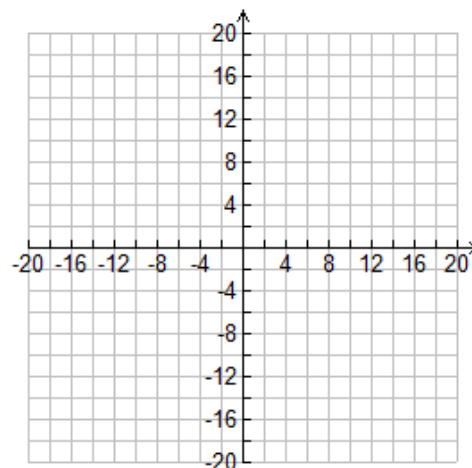
$$g(x) = \begin{cases} 4 - 5x, & x \leq -2 \\ 0, & -2 < x < 2 \\ x^2 + 1, & x \geq 2 \end{cases}$$

In addition, state the domain and range of g .

(8 APP)

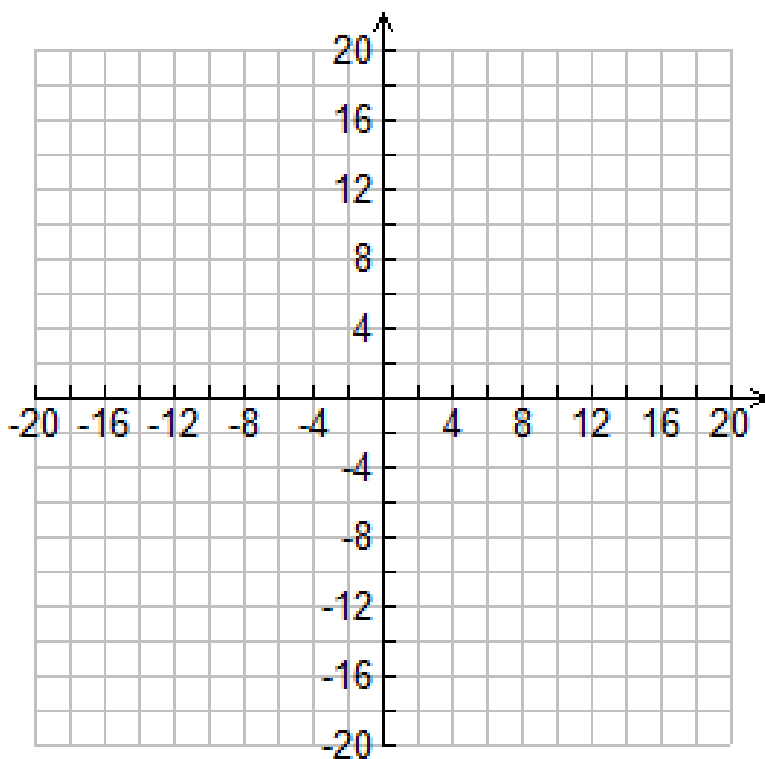
Domain = _____

Range = _____



9. Consider the function f defined by the equation $f(x) = |x|$. The function g is obtained by performing the following transformations to f :

<i>Horizontal Transformations</i>	<i>Vertical Transformations</i>
1. Reflect in the y -axis 2. Translate six units to the left	1. Reflect in the x -axis 2. Translate four units up
(a) Write the transformation using function notation. (2 KU)	(b) Write the transformation using mapping notation. (2 KU)
(c) Write the equation of g using absolute value notation. (2 KU)	(d) On the given grid, sketch the graphs of both f and g . The graph of g should be generated entirely by using the given transformations. Do not use a table of values! (6 KU)



10. Suppose that $g(x) = f(x - 5)$. Explain why the graph of g is obtained by translating the graph of f five units to the *right*, *NOT* five units to the left. Use at least one diagram to illustrate your answer. (5 COM)