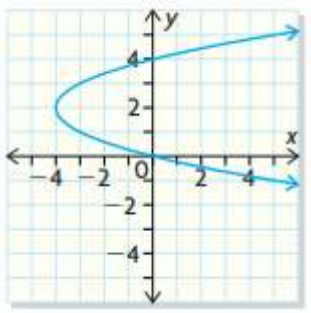
Math 11U **U2: Introduction to Functions Practice Test W24**

1. a) State the definition of a function. (*this *is* on your test or exam*)

2. State whether each is a function or just a relation. Justify your answer with proper reasoning.

a) 

b) $\{(-4,8),(-2,7),(0,3),(4,-2),(5,10)\}$

3. Let $f(x) = 3x + 5$ and $g(x) = -2x^2 - 3x + 8$.

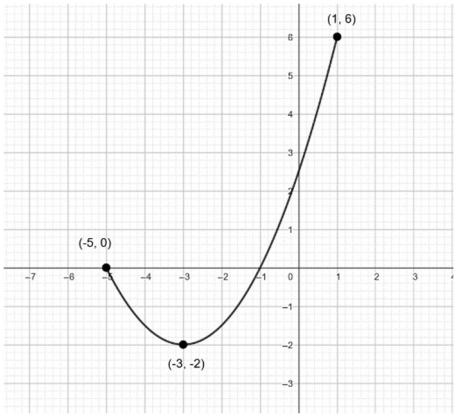
a) Evaluate $f(2)$

b) Find *x* so that $f(x) = -7$

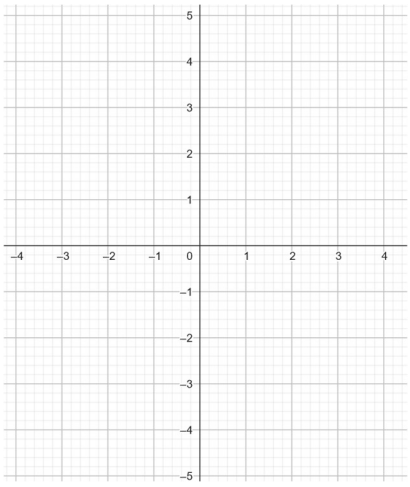
c) Evaluate $g(-3)$

d) Evaluate $f(2) - g(-3)$

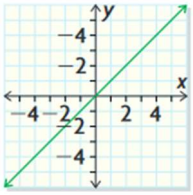
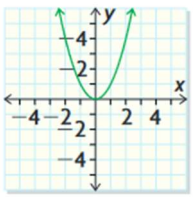
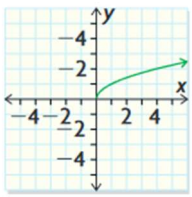
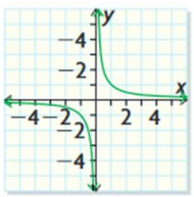
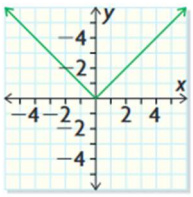
4. a) State the domain and range of the following relation:



b) Sketch a relation which is not a function



5. Under each sketch write the name the parent function type for each sketch:

6. Given the function $f(x) = |x|$, write the equation for a transformed function, g(x), after the following transformations: (No sketch required - just the equation)

horizontal stretch by the factor 3,
vertical stretch by the factor 2
vertical flip around the x-axis
Shift 5 units right and 4 units down

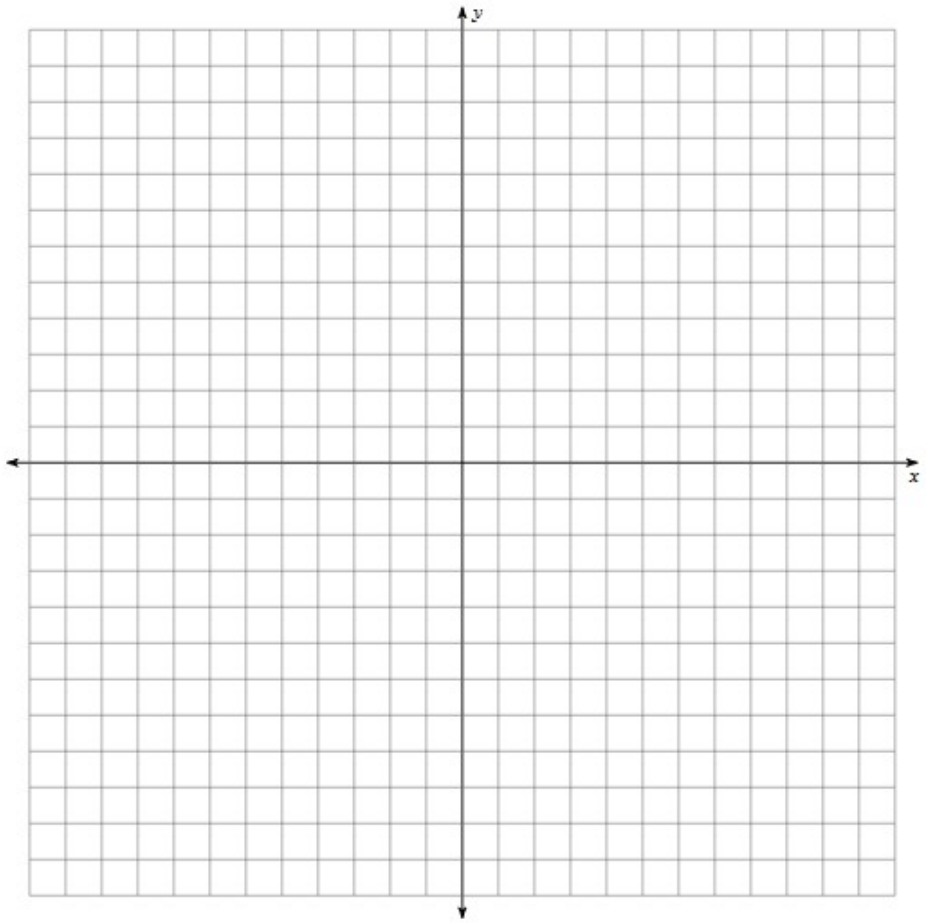
7. Fill in the table below. If necessary, round to 1 decimal place.

Function	Proper Function $f(\mathrm{x}) = \mathrm{a}\, f\left(k(x-d)\right)+c$	Vertical Stretch ***a***	Horizontal Stretch ***1/k***	Horizontal Shift ***d***	Vertical Shift ***c***
$f(x) = -2\sqrt{2x+6} - 4$					

Domain		Range		y-int (x=0)	

	Parent Function:		Transformed Function	
Table Of Values				

Graph both the parent function and the transformed function.



8. Given the graph (set of points) of the discrete function $g(x)$, state the inverse relation $g^{-1}(x)$. Is $g^{-1}(x)$ a function? Why or why not?

$$g(x) = \{(-2,3), (-1,2), (0,4), (1,3), (2,-5)\}$$

9. Determine the equation for the inverse relation. It is your choice whether you use Brute Force or Transformations.

$$f(x) = -3\sqrt{x-5} + 1$$