

MATHEMATICS 10  
ASSIGNMENT # 6

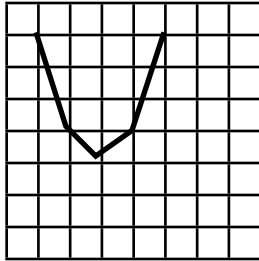
Name: \_\_\_\_\_

Total Marks: 50

Marks

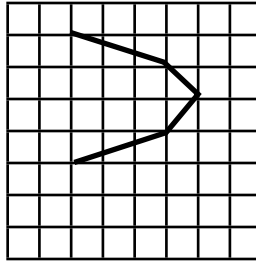
- 3 1. In the blank provided, state whether each one of the following is a function or not a function.

a)



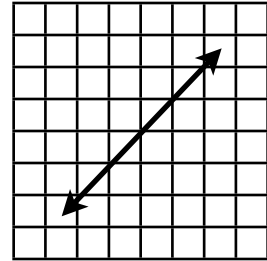
\_\_\_\_\_

b)



\_\_\_\_\_

c)



\_\_\_\_\_

- 2 2. Determine the range and domain of the following:

$\{ (2,3), (4,5), (6,7), (8,9) \}$

Range: \_\_\_\_\_ Domain: \_\_\_\_\_

- 4 3. Name the specific transformation by its proper name that is being described.

a) A flip of the parabola \_\_\_\_\_

b) A movement to the right or left \_\_\_\_\_

c) A stretch or shrinking of the parabola \_\_\_\_\_

d) A movement up or down \_\_\_\_\_

- 14 4. Provide the transformation(s) of each parabola compared to  $y=x^2$ . (2 marks each)

a)  $y = -x^2$  \_\_\_\_\_

b)  $y = (x - 3)^2$  \_\_\_\_\_

c)  $y = x^2 + 3$  \_\_\_\_\_

d)  $y = 3x^2$  \_\_\_\_\_

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

f)  $y = -(x + 6)^2$  \_\_\_\_\_

g)  $y = -1/2x^2 + 7$  \_\_\_\_\_

21 5. Write the equation for the parabola that has had the following transformation(s) done to the basic parabola of  $y = x^2$ . (3 marks each)

a) translated 5 up \_\_\_\_\_

b) translated 2 left \_\_\_\_\_

c) reflected \_\_\_\_\_

d) dilated (stretched) by a factor of 3 and translated 6 up \_\_\_\_\_

e) dilated (shrunk) by a factor of  $\frac{1}{2}$  and translated 4 right \_\_\_\_\_

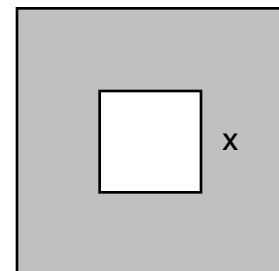
f) reflected and translated 2 left and 3 down \_\_\_\_\_

g) reflected, dilated (stretched) by a factor of 5, translated 2 left and 3 up \_\_\_\_\_

6 6. The backyard of a house is a square with side lengths 7m. A square patio is placed in the centre. If the side length, in metres, of the patio is  $x$ , then the area of the grass remaining is given by the relation  $A = -x^2 + 49$ .

a) Create a table for  $x$ -values of 0 to 7 and the accompanying area.

$x$	area
0	
1	
2	
3	
4	
5	
6	
7	



b) What coordinates are the  $x$ -intercept and the  $y$ -intercept.

c) What is the meaning of each of the above