Transformations Practice

Name: _____

PART I. Write the equations for the following transformations to $y = x^2$.

1. vertical shift up 9 _____

2. vertical shrink by a factor of $\frac{1}{10}$, horizontal shift left 5 _____

3. reflection across the y-axis, horizontal shrink by a factor of $\frac{1}{4}$ _____

PART II. Explain how the graph of $f(x) = x^2$ was transformed to form the following functions.

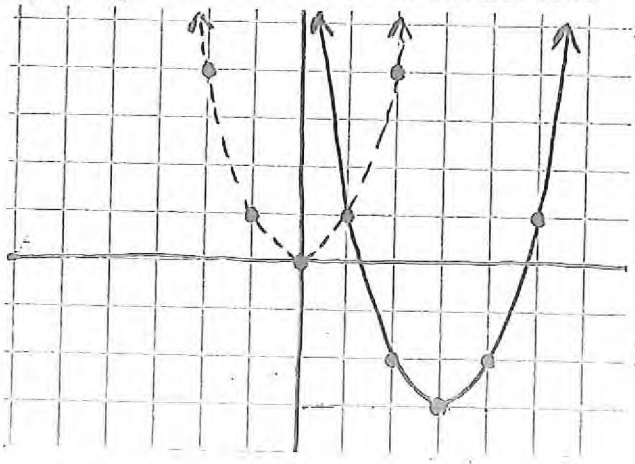
4. $y = -x^2 - 13$

5. $y = \left(\frac{1}{8}x - 11\right)^2$

6. $y = 7(x+2)^2 + 21$

PART III. For the graph below, (A) explain how the parent function is transformed to create the quadratic function new function, then (B) write the equation of the new function. ***The parent function is drawn with a dotted line.***

7.



Transformations?

Equation: _____

#4

Transformations Practice

Name: key

PART I. Write the equations for the following transformations to $y = x^2$.

1. vertical shift up 9 $y = x^2 + 9$

2. vertical shrink by a factor of $\frac{1}{10}$, horizontal shift left 5 $y = \frac{1}{10}(x+5)^2$

3. reflection across the y-axis, horizontal shrink by a factor of $\frac{1}{4}$ $y = (-4x)^2$

PART II. Explain how the graph of $f(x) = x^2$ was transformed to form the following functions.

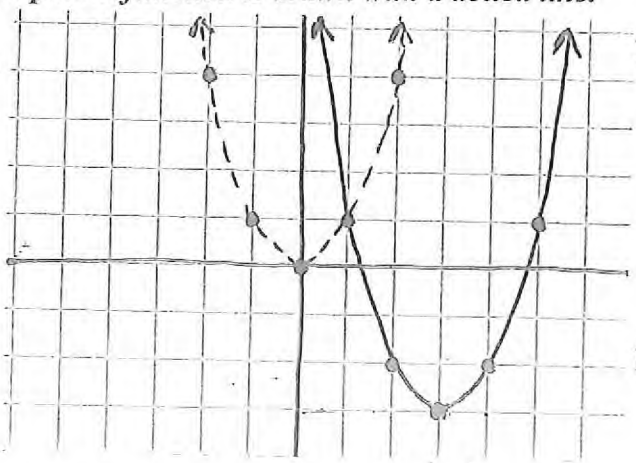
4. $y = -x^2 - 13$ reflect over x-axis
move down 13

5. $y = \left(\frac{1}{8}x - 11\right)^2$ horizontal stretch by 8
move right 11

6. $y = 7(x+2)^2 + 21$ vertical stretch by 7
move left 2
move up 21

PART III. For the graph below, (A) explain how the parent function is transformed to create the quadratic function new function, then (B) write the equation of the new function.
The parent function is drawn with a dotted line.

7.



Transformations?

moves right 3
moves down 3

Equation: $y = (x-3)^2 - 3$