Name:_____   Date:_____
**UNIT 9**   **LESSON 5**
<p align="center">**DO NOW:**</p>

1. **Reflection Rules for $f(x)$ graph**	2. **Translation Rules for $f(x)$ graph**	3. **Dilation Rules for $f(x)$ graph**
a) $-f(x)$: b) $f(-x)$:	a) $f(x) + k$: b) $f(x) - k$: c) $f(x + h)$: d) $f(x - h)$:	a) $af(x)$ when a > 1: b) $af(x)$ when $0 < a < 1$:

<p align="center">**AIM: REVIEW OF TRANSFORMATION RULES**</p>
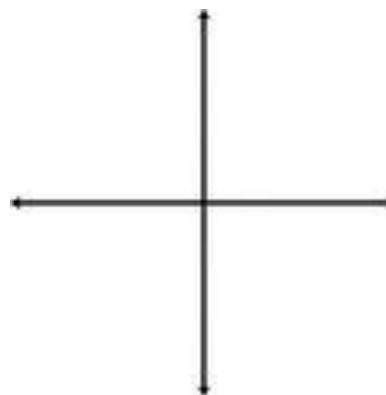
4. (a) Given: $f(x)=x^2$ (b) Sketch: $h(x)=-x^2$

State the vertex:_____   State the vertex:_____
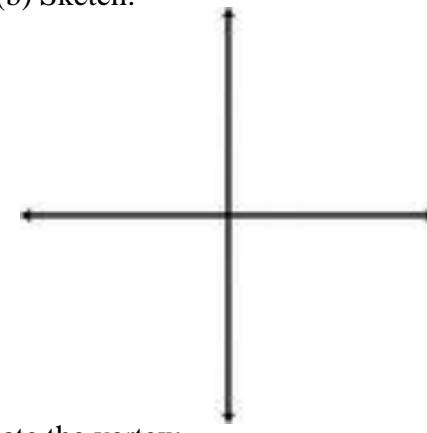
(c)Describe the transformation:_____
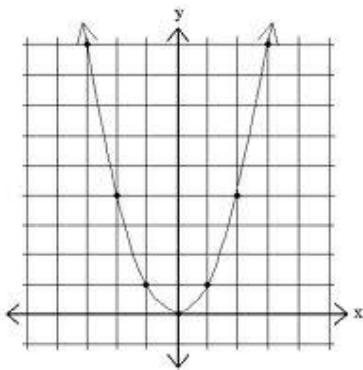
5. (a) Given: $f(x)=x^2$ (b) Sketch: $h(x)=\dfrac{1}{2}x^2$


State the vertex:_____   State the vertex:_____
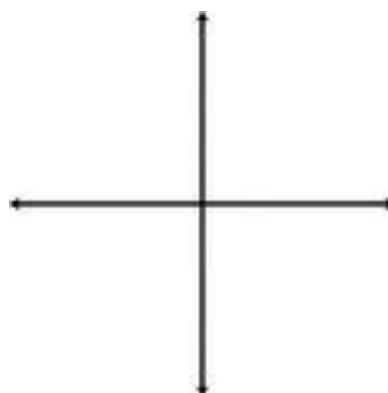
(c)Describe the transformation:_____

6. (a) Given: $f(x)=x^2$
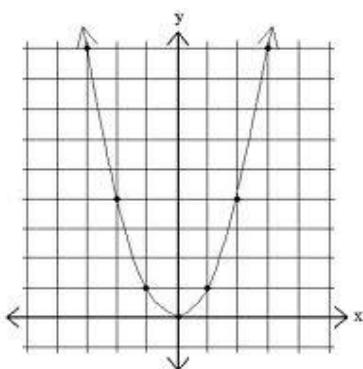
(b) Sketch: $g(x)=3x^2+1$

State the vertex:_____
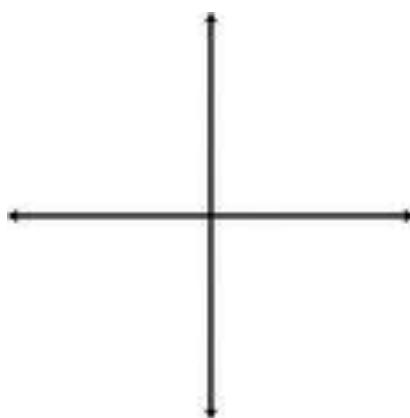
State the vertex:_____

(c)Describe the transformation:_____

7. (a) Given: $f(x)=x^2$
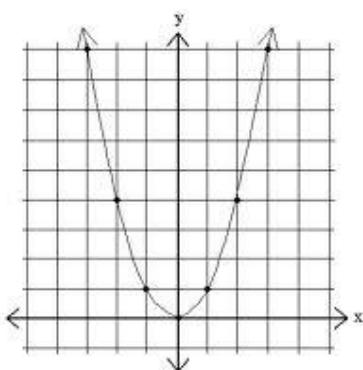
(b) Sketch: $h(x)=-x^2-5$

State the vertex:_____
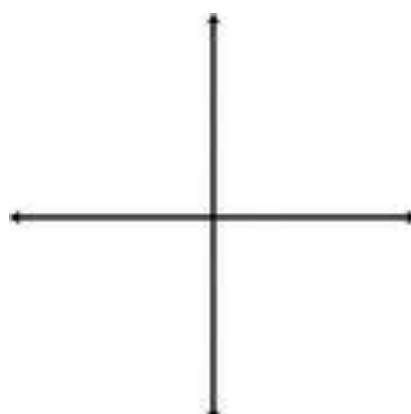
State the vertex:_____

(c)Describe the transformation:_____

8. (a) Given: $f(x)=x^2$
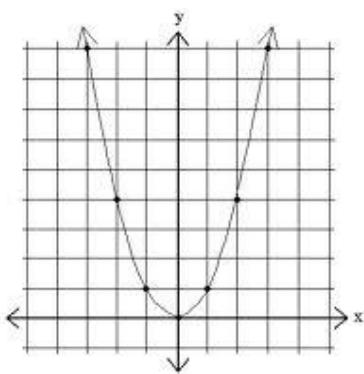
(b) Sketch: $h(x)=(x-5)^2$

State the vertex:_____
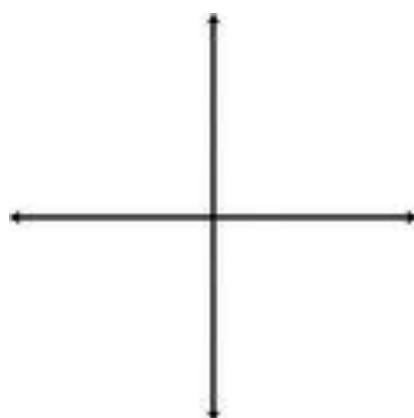
State the vertex:_____

(c)Describe the transformation:_____

9. (a) Given: $f(x) = x^2$

(b) Sketch: $h(x) = (x+3)^2 + 2$

State the vertex:_____

State the vertex:_____
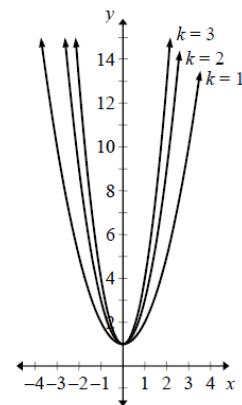
(c)Describe the transformation:_____

10. Which equation defines this set of parabolas?

a. $y = kx^2 + 1$

b. $y = \frac{1}{k}x^2 + 1$

c. $y = x^2 + k$
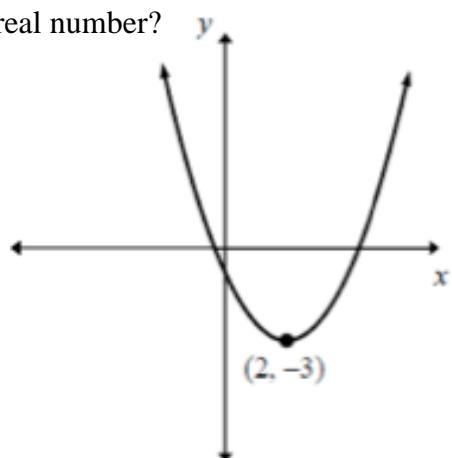
11. Which equation could define the given parabola, where a is a positive real number?

a) $f(x) = a(x-2)^2 - 3$

b) $f(x) = a(x+2)^2 - 3$

c) $f(x) = a(x-2)^2 + 3$

d) $f(x) = a(x+2)^2 + 3$

(2, –3)
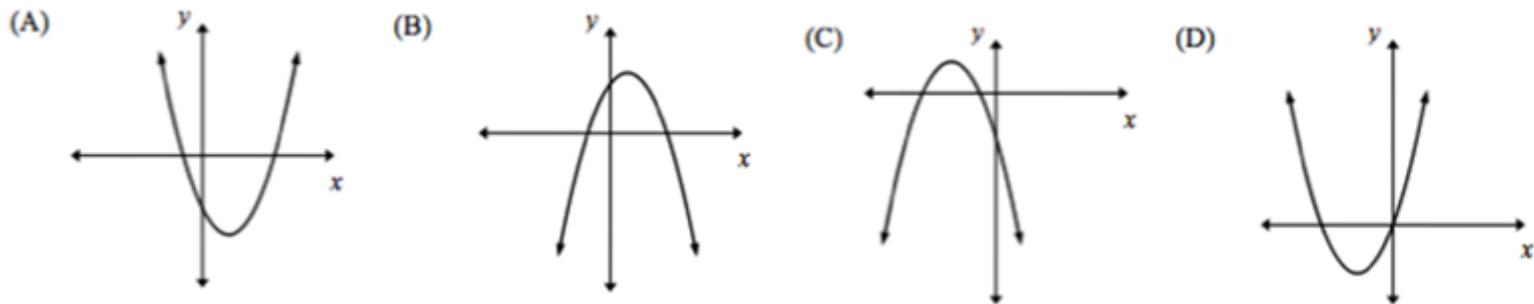
12. A parabola is defined as $f(x) = a(x-3)^2 + 10$, where a is a positive real number. As a increases, what happens to the y-coordinate of the parabola's y-intercept?

a) it decreases

b) it increases

c) it does not change

13. A quadratic function is given by $h(x) = ax^2 + bx + c$, where a and c are negative real numbers. Which of these could be the graph of $y = h(x)$?

(A)

(B)

(C)

(D)

14. Identify the vertex whose quadratic function is $h(x)=(x+3)^2 +2$:_____

15. The vertex of the parabola represented by $f(x) = x^2 - 4x + 3$ has coordinates $(2,-1)$. Find the coordinates of the vertex of the parabola defined by $g(x) = f(x - 2)$. Explain how you arrived at your answer

STANDARD FORM: **VERTEX FORM:**
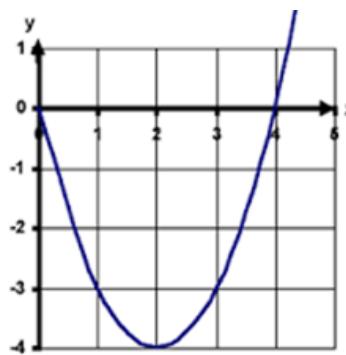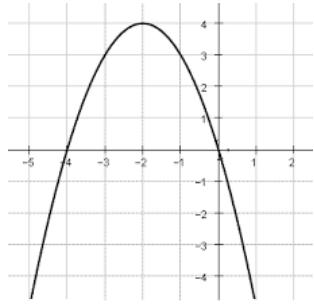
1. Given the function below answer the following:
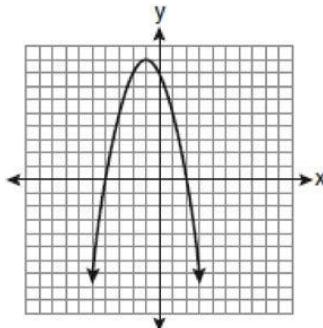

a. State the vertex:_____

b. Describe the transformation:_____

_____

2. Given the function below answer the following:

e) State the vertex:_____

f) Describe the transformation:_____

_____

3. Given the function below answer the following:
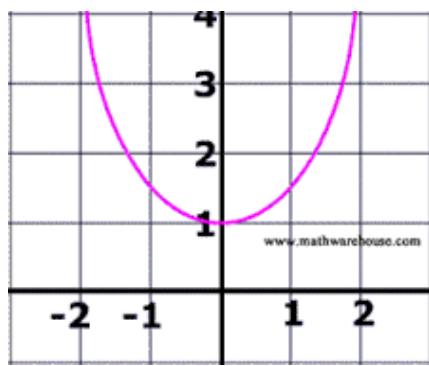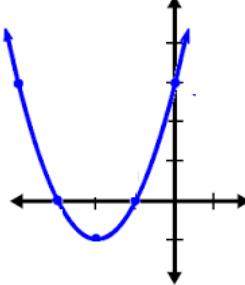
c. State the vertex:_____

d. Describe the transformation:_____

_____

4. Given the function below answer the following:

e. State the vertex:_____

f. Describe the transformation:_____

_____

5. Given the function below answer the following:

g. State the vertex:_____

h. Describe the transformation:_____

_____

6. Given the function below answer the following:

i. State the vertex:_____

j. Describe the transformation:_____

_____

DON'T FORGET TEXTBOOK HW!