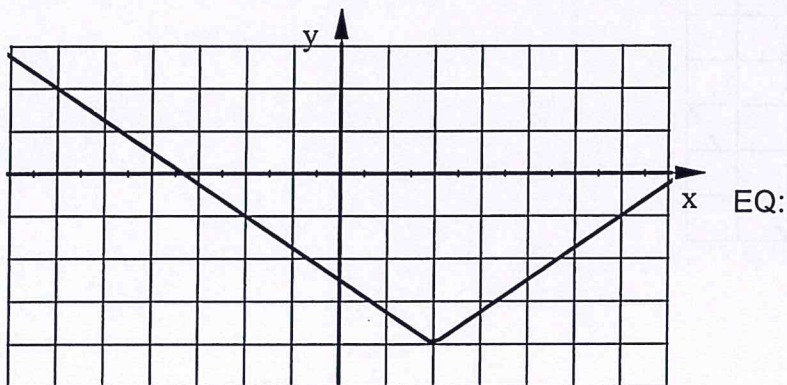


1. Describe the transformations that were used to turn the function $f(x)$ into the function $g(x)$.

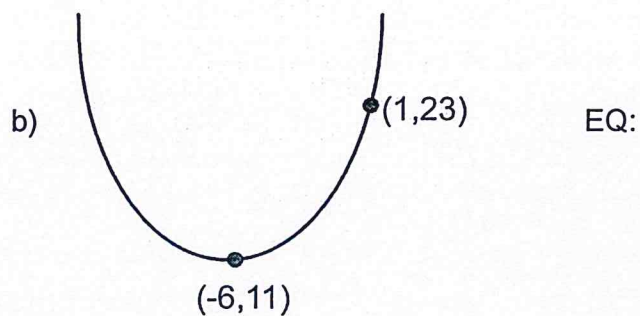
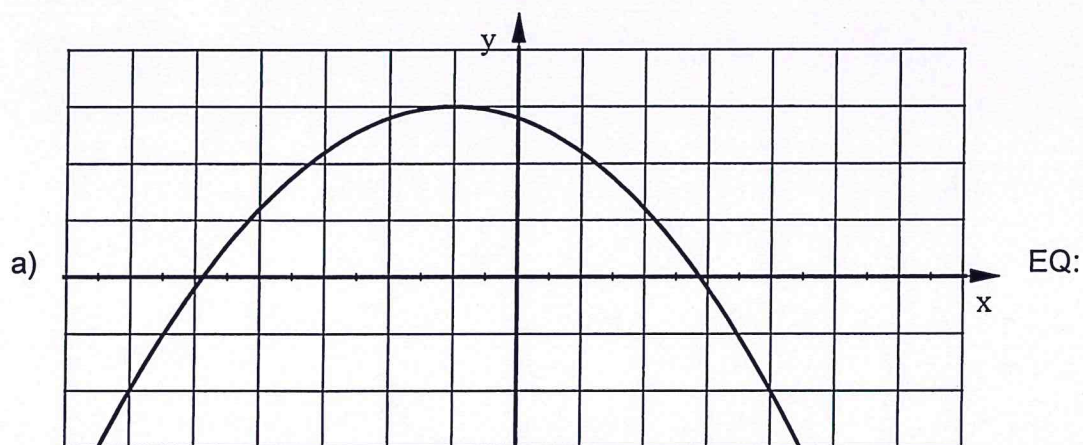
$$f(x) = -4f(x + 8) - 9$$

$$g(x) = 9f(x - 2) + 11$$

2. Write the equation of this graph in $y = a|x - h| + k$ form.

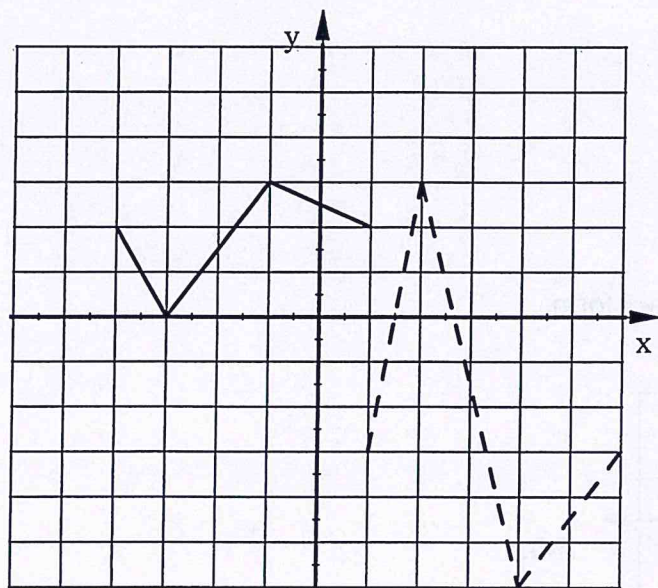


3. Write the equation of each quadratic function in Vertex Form.



#4 is on the back!

4. Describe ALL transformations that were used to turn the original function (solid lines) in the new function (dashed lines).



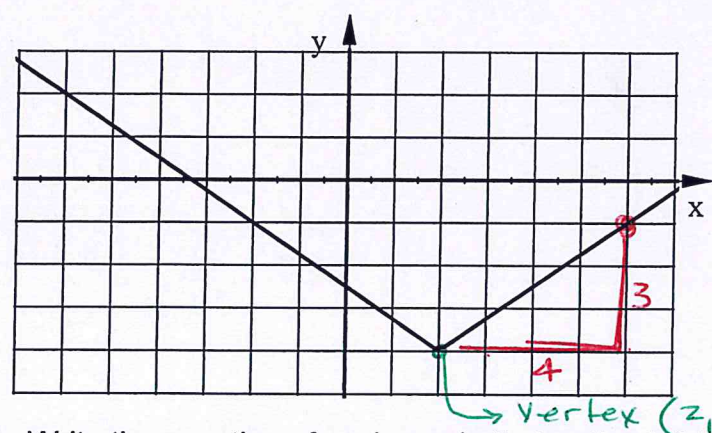
ANSWERS

1. Describe the transformations that were used to turn the function $f(x)$ into the function $g(x)$.

$f(x) = -4f(x+8) - 9$ $g(x) = 9f(x-2) + 11$

a: $-4 \rightarrow 9$ multiplied by $-\frac{9}{4} \rightarrow$ x-axis reflection $\frac{9}{4}$ x taller
 h: $x+8 \rightarrow x-2$ subtract 10 $\rightarrow$ moved 10 right
 k: $-9 \rightarrow +11$ add 20 $\rightarrow$ moved 20 up

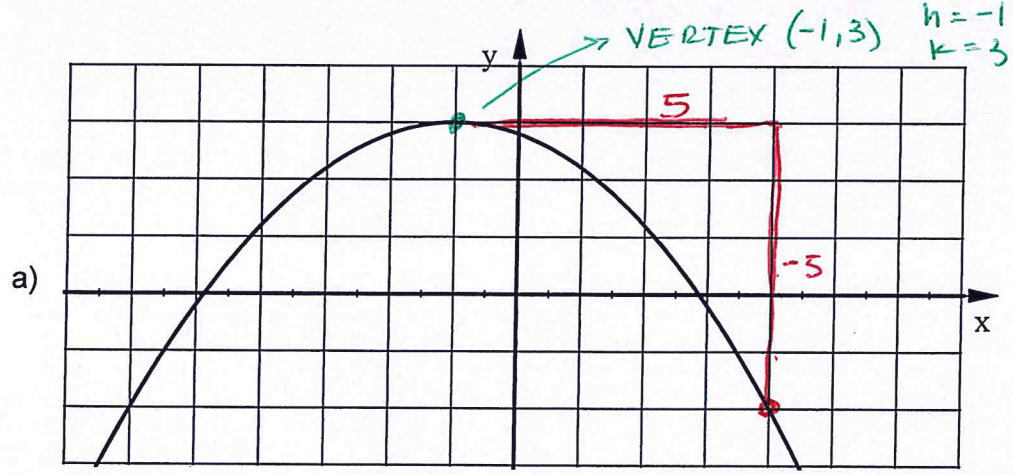
2. Write the equation of this graph in $y = a|x-h| + k$ form.



THIS FUNCTION Parent $|x|$
 $\frac{3}{4}$ 4
 $a = \frac{3}{4}$ NO X-AXIS REFLECTION

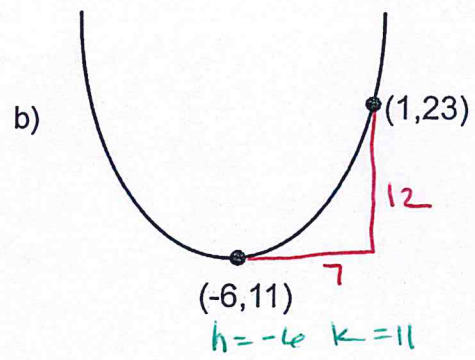
EQ: $y = \frac{3}{4}|x-2| - 4$

3. Write the equation of each quadratic function in Vertex Form.



THIS FUNCTION Parent $y = x^2$
 $\frac{-1}{5}$ 25
 $a = -\frac{1}{5}$ (x-axis refl.)

EQ: $y = -\frac{1}{5}(x+1)^2 + 3$

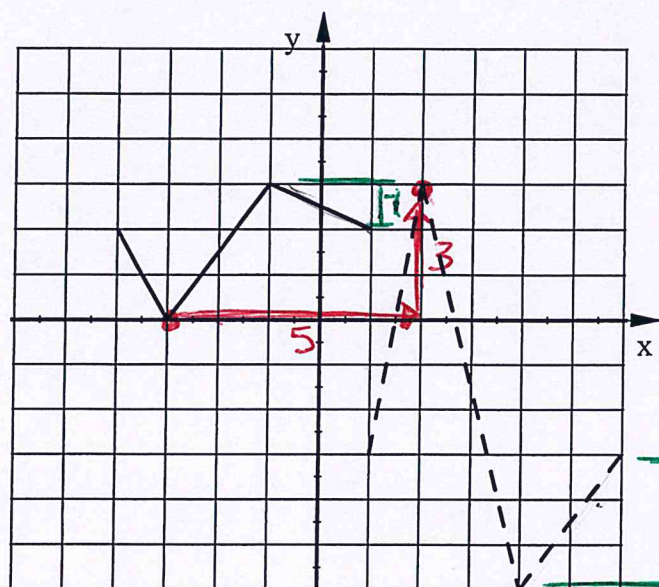


EQ: THIS FUNCTION Parent $y = x^2$
 $\frac{12}{49}$ 49
 $a = \frac{12}{49}$ NO X-AXIS REFL.

EQ: $y = \frac{12}{49}(x+6)^2 + 11$

#4 is on the back!

4. Describe ALL transformations that were used to turn the original function (solid lines) in the new function (dashed lines).



- 5 right 3 up
- X-axis Reflection
- ~~1/3~~ ^{3x} Taller

$$a = \frac{3}{-1} = -3$$