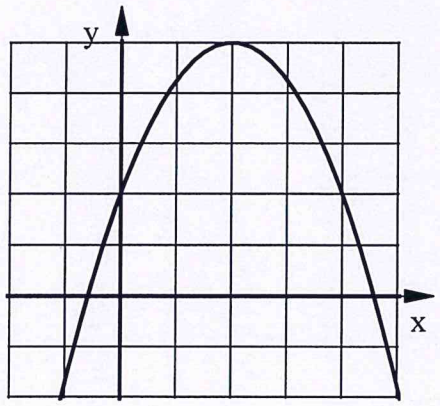
Bellwork Alg 2 Hrs 5 & 6 Monday, October 14, 2019

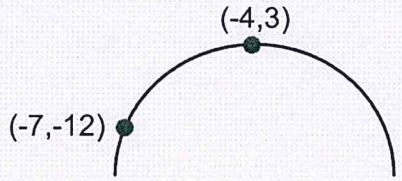
1. The function $f(x) = 6|x + 4| - 8$. The function $g(x)$ was created by transforming $f(x)$ by translating it 3 units left, 7 units up and stretched vertically by a factor of $\frac{3}{2}$. What is the equation for $g(x)$?

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

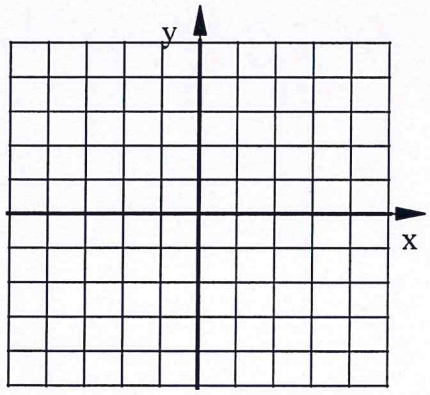
a)



b)



3. Graph this quadratic using five exact points. $y = -0.5(x + 1)^2 + 4$



4. Complete the table of values for $g(x)$ which was created by applying the following transformations to $f(x)$: vertical shrink factor of $\frac{3}{4}$ and shifted up 10.

x	$f(x)$	$g(x)$
-3	19	
-1	7	
0	4	
4	12	

Bellwork Alg 2 Hrs 5 & 6 Monday, October 14, 2019 ANSWERS

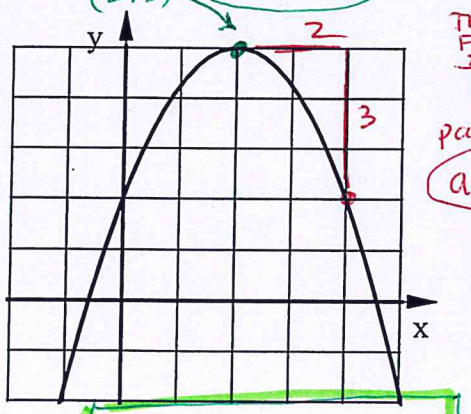
1. The function $f(x) = 6|x+4| - 8$. The function $g(x)$ was created by transforming $f(x)$ by translating it 3 units left, 7 units up and stretched vertically by a factor of $\frac{3}{2}$. What is the equation for $g(x)$?

$g(x) = \frac{3}{2} \cdot 6|x+4| - 8$ → $g(x) = 9|x+7| - 1$

$\frac{3}{2}$: STRETCH VERTICALLY; $+4$: 3 UNITS LEFT; -8: 7 UNITS UP

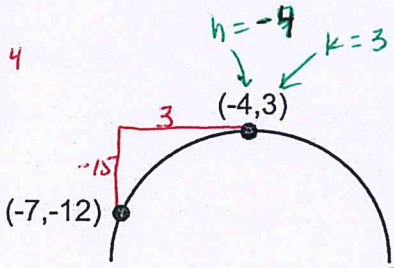
2. Write the equation of each quadratic function in Vertex Form.

a)



$y = -\frac{3}{4}(x-2)^2 + 5$

b)



$y = -\frac{5}{3}(x+4)^2 + 3$

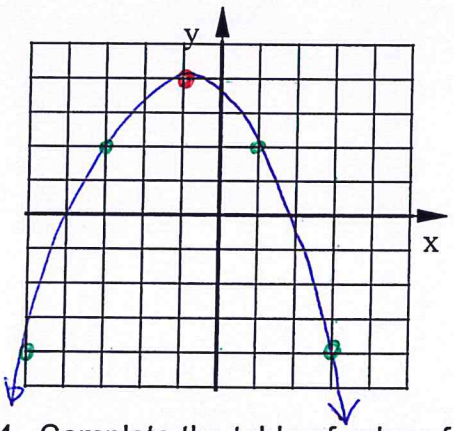
THIS FUNCTION: rise 3, run 2; parent: rise 4, run 2; $a = -\frac{3}{4}$

THIS FUNCTION: -15 / 3; parent function: 9 / 3; $a = -15/9 = -\frac{5}{3}$

3. Graph this quadratic using five exact points. $y = -0.5(x+1)^2 + 4$

1 left 4 up x-axis reflection ½ as tall

Vertex: $(-1, 4)$



1st pt: 1 × (−.5) → run 1, rise −.5 ✗

2nd pt: 4 × (−.5) → run 2, rise −2 ✓

3rd pt: 9 × (−.5) → run 3, rise −4.5 ✗

4th pt: 16 × (−.5) → run 4, rise −8 ✓

4. Complete the table of values for $g(x)$ which was created by applying the following transformations to $f(x)$: vertical shrink factor of $\frac{3}{4}$ and shifted up 10.

x	$f(x)$	$g(x)$
−3	19	$\frac{97}{4} = 24.25$
−1	7	$\frac{61}{4} = 15.25$
0	4	13
4	12	19

$g(x) = \frac{3}{4} f(x) + 10$

$g(-3) = \frac{3}{4}(19) + 10 = \frac{57}{4} + \frac{40}{4} = \frac{97}{4}$

$g(-1) = \frac{3}{4}(7) + 10 = \frac{21}{4} + \frac{40}{4} = \frac{61}{4}$

$g(0) = \frac{3}{4}(4) + 10 = 3 + 10 = 13$

$g(4) = \frac{3}{4}(12) + 10 = 9 + 10 = 19$