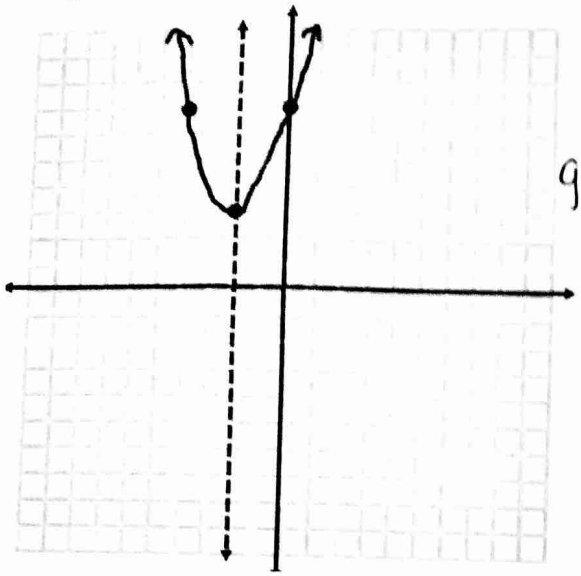
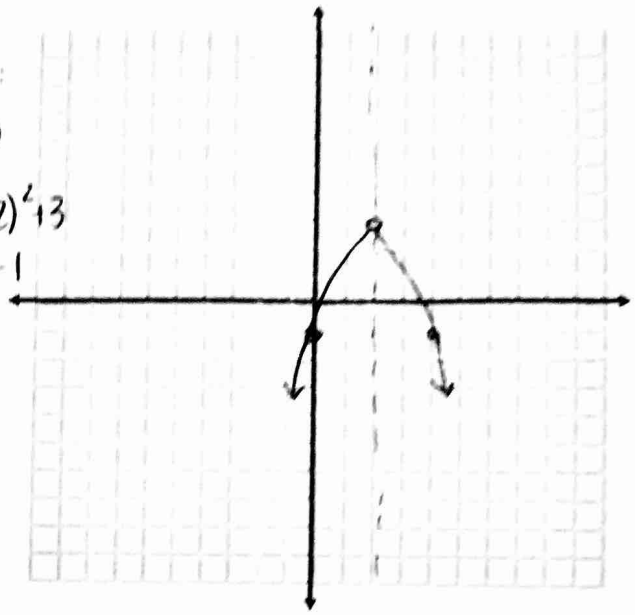
Key

1. Michael tried to graph $g(x) = -(x-2)^2 + 3$. Unfortunately, only one feature of his graph shows correct reasoning (he fell asleep during class). Sketch the graph correctly and then determine three things he did wrong.



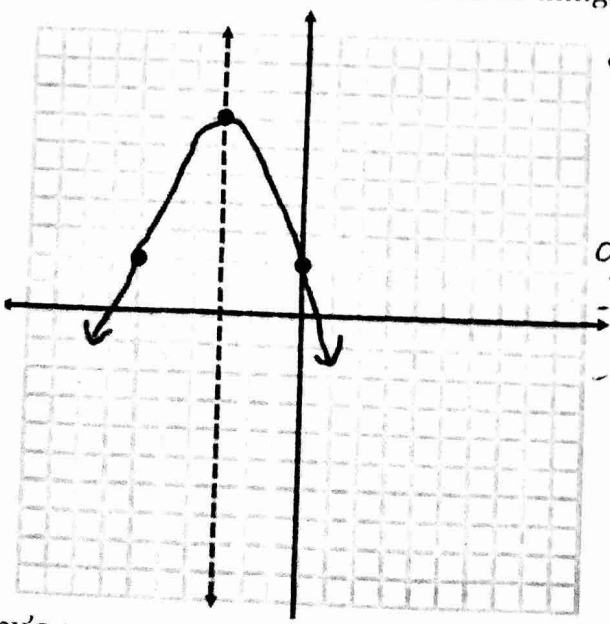
vertex:
(2, 3)
$g(0) = -(0-2)^2 + 3$
$-4 + 3 = -1$



Michael's errors:

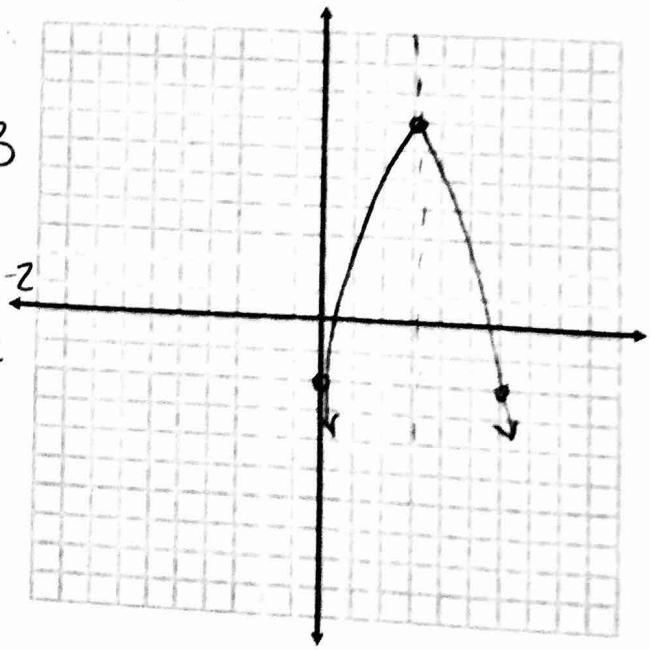
a. opens up instead of down
b. h value
c. AOS

2. Johnny tried to graph $g(x) = -x^2 + 6x - 2$. Unfortunately, he made several mistakes. Sketch the graph correctly and then determine three things he did wrong. (3, 7)



vertex
$\frac{-6}{-2} = 3$
$g(3) =$
$= (3)^2 + 6(3) - 2$
$-9 + 18 - 2$
$= 7$

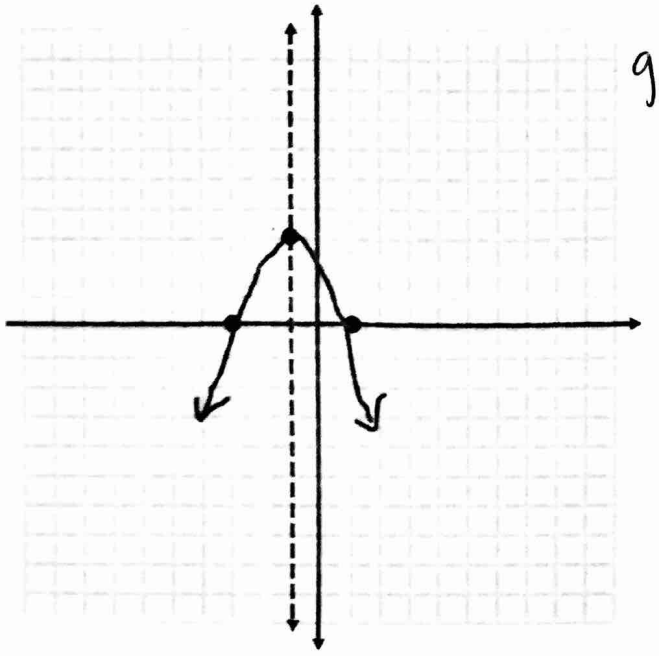
x	y
0	-2



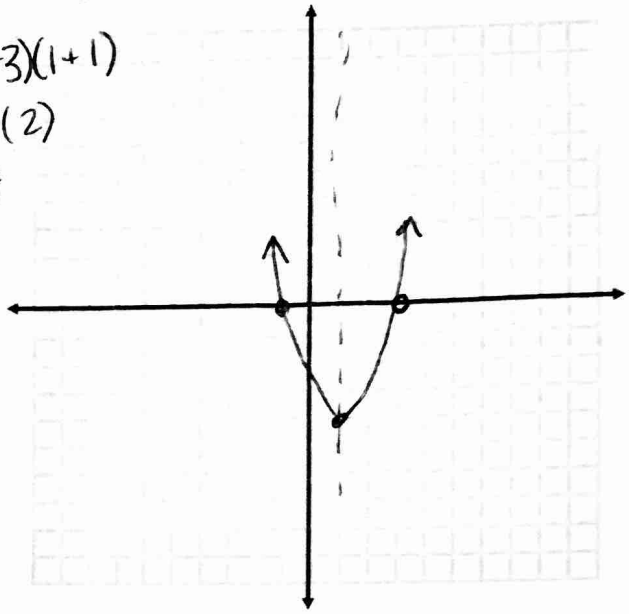
Johnny's errors:

a. ~~ver~~ h value of vertex
b. AOS
c. y-intercept

3. Alex tried to graph $g(x) = (x - 3)(x + 1)$. Unfortunately, he made several mistakes. Sketch the graph correctly and then determine three things he did wrong.



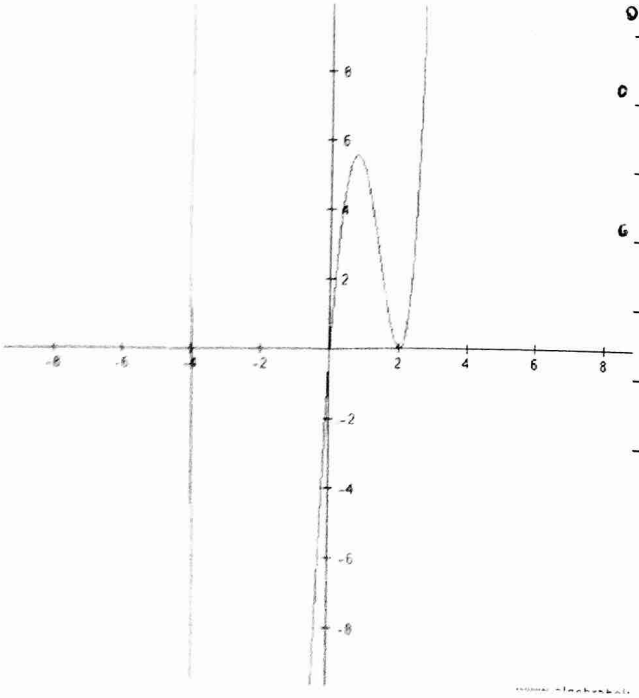
$g(1) = (1-3)(1+1)$
$= (-2)(2)$
$= -4$



Alex's errors:

a. x-int at +3
b. x-int at -1
c. open up

4. Jessica was given the graph below and wrote the equation $f(x) = (x - 4)(x + 2)$ to represent it. Explain to Jessica what she did wrong and write an equation that would work for the graph.



- x-4 is not an x-intercept
- x+2 has multiplicity because it touches the graph
- the graph crosses at 0 so x should be another factor

Equation: $f(x) = x(x+2)^2$