Practice: Sketching Key Elements of Standard Form Name: _____

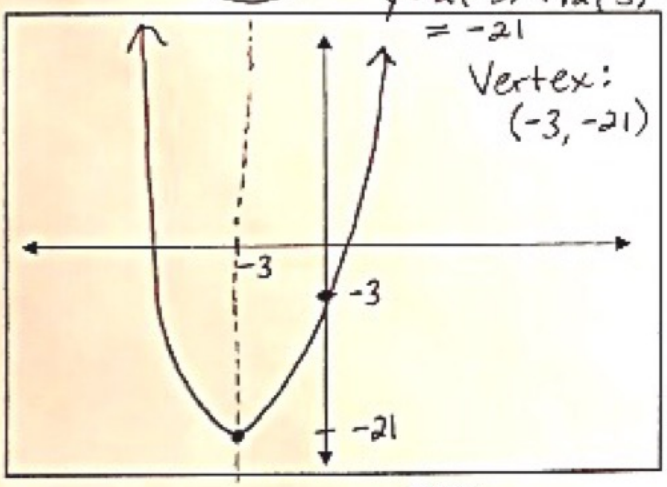
Use Standard Form: $y = Ax^2 + Bx + C$ to describe/Sketch A Quadratic Function

1. What shape does a Quadratic function have? "U" Shape - Parabola
2. How do you know when it opens up or down? If A is +, ↑, If A is -, ↓
3. What is the y-intercept when written in Standard form? C-value
4. What is the equation of the vertical line which is the Axis of Symmetry? $x = \frac{-b}{2 \cdot a}$
5. What point on the graph of a quadratic function does the A.O.S. go through? vertex

For each.... Sketch and label the graph..... include: **A.O.S.**, **Vertex** and the **y-intercept**

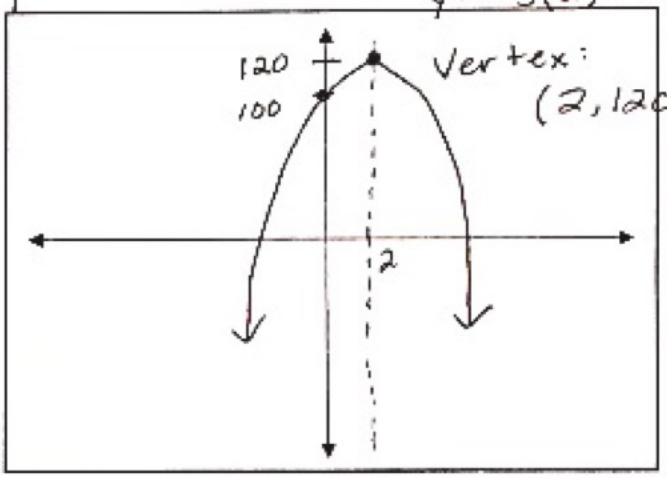
$y = 2x^2 + 12x - 3$ (y-int: -3) AOS: $x = \frac{-12}{2(2)} = -3$

$y = 2(-3)^2 + 12(-3) - 3$
$= -21$



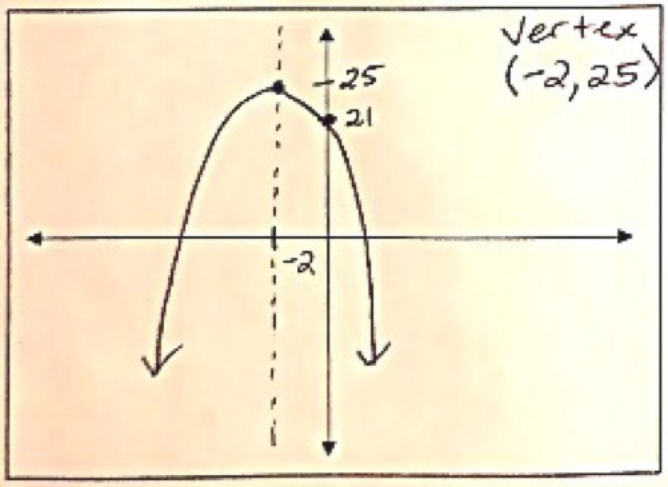
$y = -5x^2 + 20x + 100$ (y-int: 100) AOS: $x = \frac{-20}{2(-5)} = 2$

$y = -5(2)^2 + 20(2) + 100$
$= 120$



$y = -x^2 - 4x + 21$ (y-int: 21) AOS: $x = \frac{4}{2(-1)} = -2$

$y = -(-2)^2 - 4(-2) + 21$
$= 25$



$y = x^2 + 7.5x + 9$

$x = \frac{-7.5}{2(1)} = -3.75$

Vertex (-3.75, -5.1)