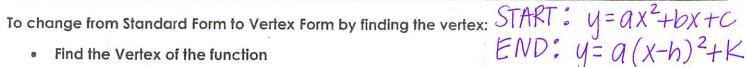
Changing Forms Notes Standard to Vertex



- Find the Vertex of the function
 - Use $\frac{-b}{2a}$ to find the "h" or x value of the vertex $\frac{-b}{2a}$ | Plug in X-Value
 - Substitute that x value back into the equation to find the "k" or the y value of the vertex
- Find the "a" from the standard form equation
- Plug the "h", "k", and "a" into Vertex Form

$$y = \alpha(x-h)^2 + K$$

Convert the following from Standard form to Vertex form.

1.
$$f(x)=x^2+8x+1$$
 $b=8$ $c=1$

1) Find Vertex: $\left(\frac{-b}{2a}, \text{plugin}\right) \rightarrow \left(\frac{-8}{2}, \right)$

vertex (-4, -15)

 $\left(\frac{-10}{2}\right) = \left(-5, -5\right)$ $(-5)^2 + 10(-5) + 20$

 $(X) = (X+5)^2 - 5$

$$f(x) = 3(x-1)^{2} + 2$$

4.
$$f(x) = -2x^2 - 16x - 32$$
 $0 = -2$ $0 = -16$ $0 = -16$ $0 = -32$ $0 = -32$

 $f(x) = -2(x+4)^2$