3. \( y = 2(x + 4)^2 - 3 \). Rewrite in the completed-square form \( a(x - x_0)^2 + y_0 \). Hint: \( x_0, y_0 \) can be negative. 

\[ \frac{3}{1} \]

3. \( y = 2x^2 + 8x + 3 \). Find the vertex, intercepts, graph.

Do the “horns” of the parabola point up \( \cup \) or down \( \cap \)?

Leave the constant 3 alone. Factor the 2 out of \((2x^2 + 8x)\) then complete the square.

If your equation looks like \( a(x + x_0)^2 - y_0 \), rewrite it in the completed-square form \( a(x - x_0)^2 + y_0 \). 

\[ \frac{3}{1} \]

vertex = 

You must use “( )”. E.g., vertex=(3,4), not vertex = 3,4. 7 symbols.

\begin{align*}
\text{x-intercept(s)? Set } y & = 0. \\
\text{Either factor } 2x^2 + 8x + 3 \text{ or use the quadratic formula } x & = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}. \text{ No roots if the radical is undefined.} \\
\text{8 symbols counting } \pm \text{ as 1 symbol.}
\end{align*}

\begin{align*}
\text{y-intercept? Equation has 3 symbols}
\end{align*}

Draw the graph. Label the vertex with its coordinates. 

\[ \frac{3}{2} \]