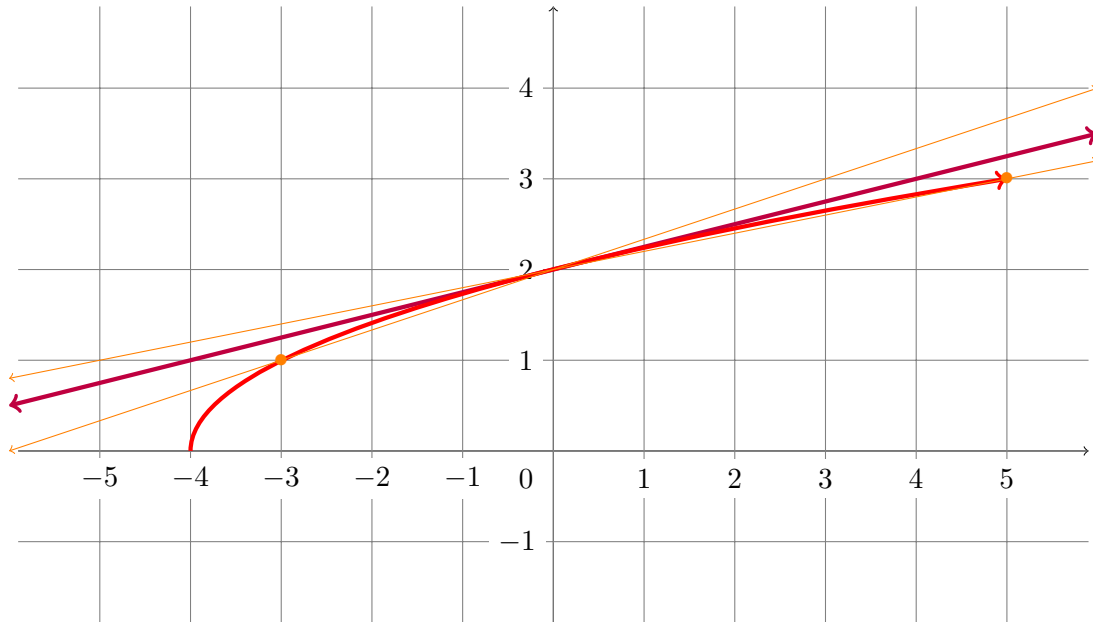1. (6 pts) On the following axes, sketch a careful graph of the function $y = \sqrt{x+4}$. Sketch and clearly mark the line tangent to the graph at $x = 0$, and also sketch a few secant lines that approach this tangent.

2. (4 pts) What is the slope of the secant line from $x = 0$ to $x = 5$? Is this greater or less than the slope of the tangent at $x = 0$?

   The secant line connects the points $(0, 2)$ and $(5, 3)$, and hence has slope $m = 1/5$. This is less than the slope of the tangent at $x = 0$, as can be seen by the picture.

3. (bonus) On the back of this page, explain whether there exists a secant line to the curve with the same slope as the tangent line at $x = 0$.

   The secant line from $(-3, 1)$ to $(0, 2)$ has slope $m = 1/3$, which from the picture is clearly more than the slope of the tangent at $x = 0$. So by continuously moving the secant line, we can make it change from having a slope greater than the slope of the tangent to having less slope, so there must be some secant line with exactly the same slope.