1. 56.66.

2. This is the reverse of a process we’ve done before. I’d start by noting that the graph of \( k \) will be FLAT (i.e. horizontal) at \( x = -2, x = -1, \) and \( x = 1 \). The graph of \( k \) will be increasing for \( x < -2 \), decreasing for \( x \) between \(-2\) and \(-1\), and increasing (with one flat spot) for \( x > -1 \).

3. This is a question about the definition of the derivative. You could use the calculator to plug \( 2.001 \) and \( 2 \) into the function. Subtract the two and divide by \( 0.001 \), and you’ve got yourself a pretty good estimate of \( \Xi'(2) \). Repeat the process with, say, \( 2.00004 \) and \( 2 \) and see if you get a number close to your previous estimate. If so, that’s your derivative.

4. All of these are slopes of secant lines. Draw the secant lines on the graph and compare their steepness.

5. The limit does not exist (it’s 1 from the right and \( -1 \) from the left), so the slope of the tangent line does not exist for that function at \( x = 0 \).