1. **6 points**

Give that \( f(x) = \sqrt{x} (x - 1) \), find the equation of the tangent line to \( f \) at the point where \( x = 1 \).

The following limit must be used:

\[
\lim_{x \to 1} \frac{f(x) - f(1)}{x - 1},
\]

will give you the slope of the tangent line to \( f(x) \) at \( x = 1 \).
2. **4 points** Use a table—*I don’t need to see your table though*—of values to estimate (4 decimal places) the value of the given limit.

\[
\lim_{x \to 0} \frac{9^x - 5^x}{x}
\]