1. (3 points) Evaluate the following limit.

\[
\lim_{x \to 2} \frac{e^{x-2} - x^2 + 3x - 3}{(x-2)^2}
\]
2. (3 points) Evaluate the following limit.

\[
\lim_{x \to \infty} (7 + 3e^{2x})^{3/x}
\]
3. (4 points) For each \( x > 0 \), a triangle is formed with vertices \((0, 0)\), \((x, 0)\) and \((x, f(x))\) where \( f(x) \) is the function given below. What is the value of \( x \) which results in the triangle of largest area?

\[
f(x) = \frac{10}{x^2 + 3x + 9}
\]