1. (2 points) Determine an equation for each horizontal asymptote on the graph of the following function. Your answer must be justified using limits.

\[ f(x) = \frac{8e^{2x} - 20}{e^{2x} + 7} \]
2. (2 points) Evaluate $\sin(2 \arccos(2/3))$

3. (2 points each) Evaluate the following limits.

   (a) $\lim_{x \to 2} \frac{x^2 - 3x + 2}{x^2 - 4x + 4}$

   (b) $\lim_{x \to 0} \frac{3x}{\sqrt{36 - x} - 6}$

4. (2 points) Precisely state the Intermediate Value Theorem.