We will learn l’Hospital’s Rule and other shortcuts for obtaining limits later. For now you are not allowed to use these approaches.

1. (2 points) Evaluate \( \tan(\arcsin(2/3)) \).

2. (2 points each) Evaluate the following limits. For infinite limits, you must clearly show whether the limit is \( \infty \) or \( -\infty \).

   (a) \( \lim_{x \to 2} \frac{x^2 - 3x + 2}{x^2 - 4} \)
(b) \( \lim_{x \to 2} \frac{\sqrt{x^2 + 5} - 3}{x - 2} \)

(e) \( \lim_{x \to e^+} \frac{1 - \ln(\sqrt{x})}{1 - \ln(x)} \)
3. (2 points) Write an equation for each horizontal asymptote on the graph of the given function. Use limits to justify your answer.

\[ f(x) = \frac{12e^{-x} + 35}{5 + 3e^{-x}} \]