1. (2 points) Evaluate $\csc(2 \arccos \left( \frac{4}{5} \right))$.

2. (1 point) Which one of the following equations must hold in order for a function $w$ to be continuous at a number $p$?

   (a) $\lim_{x \to 0} w(x) = w(p)$
   (b) $\lim_{x \to 0} w(x) = 0$
   (c) $\lim_{x \to 0} w(x) = p$
   (d) $\lim_{x \to p} w(x) = w(p)$
   (e) $\lim_{x \to p} w(x) = 0$
   (f) $\lim_{x \to p} w(x) = p$
   (g) $\lim_{x \to \infty} w(x) = w(p)$
   (h) $\lim_{x \to \infty} w(x) = 0$
   (i) $\lim_{x \to \infty} w(x) = p$
3. (2 points each) Evaluate the following limits. An answer of ‘does not exist’ is not sufficient. For infinite limits you must state if it is $\infty$ or $-\infty$.

(a) \[ \lim_{x \to 4^-} \frac{\sqrt{x - 12}}{x - 4} \]

(b) \[ \lim_{x \to 0} \left( \frac{1}{2x} - \frac{3}{x^2 + 6x} \right) \]
4. (3 points) Find all horizontal asymptotes on the graph of \( f(x) = \frac{16 + 15e^{2x}}{3e^{2x} - 8} \).