Math 220 (section AD?) **Quiz 3** **Spring 2016**

Name _____

- 20 minutes
- No calculators
- Show sufficient work
- Do not use derivatives

1. (2 points) Evaluate $\csc(\arctan(3/2))$.

2. (2 points) For what value of the constant C is the function f continuous at $x = 0$?

$$f(x) = \begin{cases} \dfrac{\sin(2x)}{x\cos(x)} & \text{if} \quad x < 0 \\ 9e^x + C & \text{if} \quad x \geq 0 \end{cases}$$

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 ∞ or $-\infty$.

(a) $\lim_{x \to 3^+} \dfrac{x^2 - 8x + 15}{x^2 - 6x + 9}$

(b) $\lim_{x \to 0} \dfrac{2x}{\sqrt{25 + x} - 5}$

4. (2 points) Determine an equation for each horizontal asymptote on the graph of the function.

$$f(x) = \frac{6e^x}{3e^x + 4}$$