Name _____

- You have 15 minutes   • No calculators   • Show sufficient work

1. (2 points) Evaluate $\csc\left(\arctan\left(10\right)\right)$.

2. (2 points) For what value of the constant C is the function f continuous on $(-\infty, \infty)$?

$$f(x) = \begin{cases} \dfrac{6x + \sin x}{2x} & \text{if} \quad x < 0 \\ e^x + C & \text{if} \quad x \geq 0 \end{cases}$$

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

(a) $\lim\limits_{x \to 0^+} \dfrac{x - 2}{\sin x}$

(b) $\lim\limits_{x \to 5} \dfrac{x^2 - 25}{x^2 - 7x + 10}$

(c) $\lim\limits_{x \to \infty} \dfrac{9 + 5\ln\left(x^2\right)}{2 + 7\ln\left(x^3\right)}$