QUIZ 3

1. (3 points) Evaluate the limit if it exists. If it does not exist, write DNE.

$$\lim_{x \to 3} \frac{x^2 - 9}{2x^2 - 5x - 3}$$

2. (3 points) Let

$$f(x) = \begin{cases} cx^3 - 3 & \text{if } x < 1 \\ x^2 - cx & \text{if } x \geq 1 \end{cases}$$

Find the value of c that makes $f(x)$ continuous everywhere.

3. (4 points) Find the vertical and horizontal asymptotes of $y = \dfrac{x^2 - 1}{x^2 + 2x + 1}$.