MATH 19501 Quiz 8 - Winter 25

Name: _____ EMPLID: _____ Answer all 3 questions.

You must show all of your work as neatly and clearly as possible and indicate the final answer in the provided region for each non-graph question. For all graph questions, you should sketch your graph on the grid provided.

1. (6 points) Use polynomial long division or synthetic division to divide $(x^2 + 5x - 1) \div (x - 1)$. Specify the quotient $q(x)$ and the remainder $r(x)$ Write your answer in the box below:

$q(x) =$ $\qquad$ $r(x) =$

2. (4 points) Using the Remainder Theorem, find the remainder when $f(x) = x^3 - 4x^2 - 5$ is divided by $x - 3$. Write your answer in the box below:

The remainder is

3. (4 points) Use Factor Theorem to determine whether $x - 1$ is a factor of the function $f(x) = 2x^3 - x^2 + 2x - 3$.

Circle one of the options in the box below:

$x - 1$ is a factor of $f(x)$ / is not a factor of $f(x)$