

Name:

**Problem 1:** Consider the rational function given by the following rule:

$$f(x) = \frac{x + 1}{x^2 - x - 2}.$$

- a) What is the domain of this function?
- b) Does this function have one or many vertical asymptotes? If so, give the equation of each vertical asymptote.
- c) Does this function have one or many holes (or removable discontinuities)? If so, give the  $x$ -coordinate of each hole (or removable discontinuity).