Math 3B   Quiz 5

Name:_____   Section Day and Time:_____

Complete the following problems, making sure to SHOW ALL WORK. If you're stuck on something, CLEARLY EXPLAINING what you do know or what you would do will get you partial credit!

1. (a) Simplify the rational expression
$$\frac{x^2 + 3x + 1}{x - 2}$$
   by way of polynomial long division.

   (b) Compute
$$\int_0^1 \frac{x^2 + 3x + 1}{x - 2} \, dx.$$

   (c) Write the definition (in terms of limits and integrals) of the improper integral
$$\int_1^3 \frac{x^2 + 3x + 1}{x - 2} \, dx.$$
   Can you tell quickly whether the integral converges or not?

2. Write, draw, or otherwise create something. Potential points for creativity and how much you help me enjoy grading!