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By signing here, you agree to abide by the **Georgia Tech Honor Code**: *I commit to uphold the ideals of honor and integrity by refusing to betray the trust bestowed upon me as a member of the Georgia Tech Community.*

Sign Your Name: \_\_\_\_\_

For Question (0.) below please list any **outside resources** you used to help solve quiz problems. You can use calculators, textbook/course documents, websites, solving tools, or each other (e.g., TI-89 calculator, textbook formula sheet on page 281, 3Blue1Brown YouTube video on integrals, WolframAlpha, Symbolab). **Be specific.** List the name of anyone who helped you. If you used no outside resources, write N/A.

As always, anything you submit must be your own work. Never submit the work of someone else.

Please clearly organize your work, show all steps, simplify all answers, and BOX your answers.

0. (1 point) *Full credit for accurately following the directions above.*

1. (3 points) Fill in the blanks using arbitrary constants  $A, B, C, D, \dots$  (as many as you need) to set up a partial fraction decomposition for the given rational function. Leave any unused boxes blank. *Do not integrate!*

$$\frac{x^2 - 4}{x^2(x^2 + x + 1)^3} = \boxed{\phantom{0}} + \boxed{\phantom{0}} + \boxed{\phantom{0}} + \boxed{\phantom{0}} + \boxed{\phantom{0}}$$

2. (8 points) Use partial fractions to find the general anti-derivative of  $f(x) = \frac{1}{x^2 + x - 2}$ .  
(Note there is a 3rd page to the QUP version of the quiz this week!)

3. (8 points) Evaluate.

$$\int \frac{\sqrt{x^2 - 9}}{x} dx$$