Name: _____

Write all of your responses on this quiz paper, use the back if necessary. Show all your work, answers without supporting justification will not receive credit.

1. (*25 Points*): Find the following integral,

$$\int \frac{x+2}{x^2+3x-4}\,dx$$

2. (*25 Points*): Find the following integral,

$$\int x \cos^2(x)\, dx$$

3. (*25 Points*): Find the following integral,

$$\int \frac{1}{x\sqrt{4x^2+1}}\,dx$$

4. (*25 Points*): Find the following integral,

$$\int \frac{1}{\sqrt{x+1}+\sqrt{x}}\,dx$$

5. (*10 Points*): Use (a) the Trapezoidal Rule, (b) the Midpoint Rule, and (c) Simpson's Rule to approximate the given integral with $n = 4$ subdivisions. Also determine the error bounds for each of the three methods. The graphs of $f''(x)$, $f'''(x)$, and $f^{(4)}(x)$ are given below. Give your answers to at least 5 significant digits.

$$\int_0^4 \ln(1 + e^x)\, dx$$