> Answer the questions below. You may answer in the space provided. You may use the back or a separate sheet of paper if you need more space. You are to work in groups of no more than four people. Make sure to enter the names of your groupmates below.

Name: _____

Section: _____

Group Members: _____

1. Consider the integral
$$\int_0^1 \frac{2x^3 + 5x}{x^4 + 5x^2 + 4} \, dx.$$

   (a) (1 point) What is the form of the partial fraction decomposition of the integrand?

   (b) (2 points) Determine the partial fraction decomposition of the integrand.

   (c) (2 points) Calculate the integral.

2. Consider
$$\int_{5/2}^4 \frac{1}{\sqrt{2x - 5}} \, dx.$$

   (a) (1 point) Explain why this is an improper integral.

   (b) (2 points) Calculate the integral, or show that it diverges.

3. (2 points) Calculate
$$\int_0^\infty x e^{-5x^2} \, dx.$$