Name:_____   **Recitation** (circle one)**:**   **B1**   **B2**   **B3**

Directions: Show ALL your work. Correct answers which are not properly justified will not receive full credit. Failure to follow directions specific to a problem will also result in the loss of points. Please box final answers.

1. (5pts) Work on EITHER (a) OR (b).

   (a) Evaluate the integral $\displaystyle \int \frac{x-9}{(x-5)(x-2)} dx$.

   (b) Determine whether $\displaystyle \int_0^{\infty} xe^{-x^2} dx$ is convergent or divergent.

2. (5pts) Find the radius of convergence and interval of convergence for $\sum_{n=1}^{\infty} \dfrac{x^n}{5^n n^5}$.