Your Name:

Duration of the Quiz is 20 minutes. There are only two problems, worth 20 points. Show all your work for full credit. Books, notes etc. are prohibited. Calculators are NOT permitted.

1. Determine whether the improper integral converges or diverges.

$$\int_{-\infty}^{\infty} xe^{-x^2}\, dx$$

2. **Set up** an integral to compute the area of the region enclosed by the graphs of $f(x) = 20+x-x^2$ and $g(x) = x^2-5x$.