

Warm-up Problems - April 5, 2006

Solutions

Lecture Problems

(No warm up problems)

1. For the integrals below:

- Write the integral using a limit.
- Integrate.
- Evaluate the integral

(a)

$$\int_0^{\infty} e^{-x} dx = 1$$

(b)

$$\int_0^{\infty} e^x dx = \infty$$

(c)

$$\int_{-\infty}^0 e^{-x} dx = \infty$$

(d)

$$\int_{-\infty}^0 e^x dx = 1$$

(e)

$$\int_0^{\infty} x e^{-x} dx = 1$$

(f)

$$\int_0^{\infty} x^2 e^{-x} dx = 2$$