

1. (10 points) Evaluate the following:

(a) $\int x e^{-2x^2} dx$

(b) $\int_0^1 \frac{2x^2}{x^3+1} dx$

2. (10 points) When a cake is removed from an oven, its temperature is 300 degrees F. Three minutes later its temperature is 200 degrees F. After how many minutes will its temperature be 100 degrees F. Assume the temperature of the room is always 70 degrees F.