

Name _____

Homework 2
section 7.2

Evaluate each of the following integrals.

1. (7) $\int (\ln t)^2 dt$

2. (6) $\int x^3 e^{x^2} dx$

3. (7) Let $F(a)$ be the function which gives the area under the graph of $y = xe^{-x}$ between $x = 0$ and $x = a$, for $a > 0$.

(a) Find a formula for the function $F(a)$.

(b) Is F an increasing or a decreasing function? Be sure to show work and/or give an explanation in support of your answer.

(c) Is F concave up or concave down for $0 < a < 1$? Be sure to show work and/or give an explanation in support of your answer.