

Exam 2

1. (10 points) Evaluate

$$\int x^2 e^{-x} dx$$

2. (10 points) Evaluate

$$\int x e^{-x^2} dx$$

3. (10 points) Evaluate

$$\int x \ln x dx$$

4. (10 points) Evaluate

$$\int \frac{\cos(\ln x)}{x} dx$$

5. (10 points) Evaluate

$$\int \sqrt{4 - x^2} dx$$

6. (10 points) Evaluate

$$\int \tan^3 x \sec x dx$$

7. (10 points) Evaluate

$$\int x \tan^{-1} x dx$$

8. (15 points) Evaluate

$$\int \frac{2x - 1}{\sqrt{2x - x^2}} dx$$

9. (15 points) Evaluate

$$\int \frac{x - 1}{x^2(x^2 + 1)} dx$$