217 EXAM I – FEBRUARY 19, 2003

NAME:_____

T.A.:_____

INSTRUCTIONS: Show all your work. Answers alone will receive little or no credit. Be neat. We do not want to be required to guess at what you're doing. We must be able to see how you got to your answer. **Take your time and be careful with your calculations. A mistake early in your work could be costly.**

1. _____

2. _____

3. _____

4. _____

5. _____

TOTAL_____

1. (20 p'ts.) Solve the following differential equation with initial conditions.

$$dy/dx = x^2y^4; \quad x = 1,\ y = 1$$

Ans. _____

2. (20 p'ts.) Evaluate the following indefinite integrals:

a) $\int (5x^2+1)\sqrt{5x^3+3x-3}\,dx.$

Ans. _____

b) $\int (\sin 2x + \cos 2x)^2 \, dx$

Ans._____

3. (20 p'ts.) Evaluate:

$$\sum_{i=1}^{10} (i-1)(4i+3).$$

Ans. _____

4. (20 p'ts.) Evaluate:

$$\lim_{n\to\infty} \sum_{i=1}^{n} \left[\frac{27i^2}{n^3} - \frac{18i}{n^2}\right].$$

Ans. _____

5. (20 p'ts.) Evaluate the following:

a) $\int x^6 \sin(3x^7+9)\cos^{1/3}(3x^7+9)\,dx$

Ans. _____

b) $\int_{-10}^{10} [v + \sin v + v \cos v - \sin^3 v]^5 \, dv$

Ans. _____