Practice Exam 2
Calculus II
Math 1297
Chapters 6, 7

NOTE: The material listed in this exam does not necessarily contain all types of test questions. Any question related to homework, quizzes, or lecture is fair game.

You will not need a graphing calculator on the exam, please do not bring one. An inexpensive calculator is fine.

Please bring your U-Card to the real exam for identification

Integrate the following:

1. $\int \sin^4 x \cos^3 x dx$

2. $\int \sqrt{\tan x} \sec^4 x dx$

3. $\int \frac{1}{1+\cos 2x} dx$ (use a table entry after a substitution)

4. $\int \frac{1}{\sqrt{25-x^2}} dx$

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

6. $\int x^2\sqrt{4-x^2}\,dx$ (use a table entry after a substitution)

7. $\int \frac{2x+1}{x^2+3x+2}\,dx$

8. $\int \frac{2x+1}{x^2+2x+2}\,dx$

9. $\int \frac{2x^4+2}{x^2+3x+2}dx$

10. $\int \frac{2x+1}{2x^3+6x^2+4x}dx$

11. $\int \frac{2}{(x^2-x-6)(x^2+6x+9)}dx$ (set up partial fractions)

12. $\int \frac{x+2x^2}{x}dx$

13. $\int x\sqrt{x-5}dx$

14. $\int \sin x \cos(\cos x)dx$

15. $\int \sin(2x+3)dx$

16. $\int \frac{x^4}{x^{10}+2}dx$ (use a table entry after a substitution)

17. $\int x^2\sqrt{5-x^2}\,dx$ (table)

18. $\int \tan^5 x\,dx$ (table)

Find the following limits:

19. $\lim\limits_{x\to\pi}\dfrac{\sin 2x}{2\sin x}$

20. $\lim\limits_{x\to 2}\dfrac{x-2}{x^2-4}$

21. $\lim_{x \to 0^+} \frac{\sin x}{\sqrt{x}}$

22. $\lim_{x \to 1} \frac{\sqrt{x} - 1}{x - 1}$

23. $\lim_{x \to 3} \frac{2x + 4}{6x - 2}$

24. $\int_0^{\infty} x^{1/2} dx$

25. $\int_1^{\infty} x^{-6/5} dx$