Math 140 handout

Evaluate the following integrals: (Note: a and α are constants...)

1. $\int x(x^2-1)^{99}\,dx$ **2.** $\int \frac{x^2}{\sqrt{2+x^3}}\,dx$ **3.** $\int \sin 4x\,dx$

4. $\int \frac{dx}{(2x+1)^2}$ **5.** $\int \frac{x+3}{(x^2+6x)^2}\,dx$ **6.** $\int \sec a\theta \tan a\theta\,d\theta$

7. $\int x^3\sqrt[3]{2+x^4}\,dx$ **8.** $\int \sqrt{5x-1}\,dx$ **9.** $\int (2x+1)(x^2+x+1)^3\,dx$

10. $\int \frac{2}{(4t+1)^6}\,dt$ **11.** $\int (1-2y)^{2.3}\,dy$ **12.** $\int \cos 2\theta\,d\theta$

13. $\int \cos^2(3x)\,dx$ **14.** $\int \frac{x}{\sqrt{x-2}}\,dx$ **15.** $\int x^3(1-x^2)^{3/2}\,dx$

16. $\int (\sin 3\alpha - \sin 3x)\,dx$ **17.** $\int \cos^4(3x)\sin(3x)\,dx$ **18.** $\int \sec x \tan x\sqrt{1+\sec x}\,dx$

19. $\int \cos x \cos(\sin x)\,dx$ **20.** $\int \frac{3x-1}{(3x^2-2x+1)^2}\,dx$ **21.** $\int \frac{1}{x^2}\sqrt{1-\frac{1}{x}}\,dx$

22. $\int \frac{x}{\sqrt{x^2+a^2}}\,dx$ **23.** $\int \frac{3}{\sqrt{(4-3x)^3}}\,dx$ **24.** $\int \tan^4(5x)\sec^2(5x)\,dx$

25. $\int \frac{x}{\sqrt{a^2-x^2}}\,dx$ **26.** $\int x\sqrt{a^2-x^2}\,dx$ **27.** $\int x^5\sin(x^6+\pi/7)\cos^3(x^6+\pi/7)\,dx$