

**Integration Practice****Math 232 Spring 2004**

The following thirty integrals should help you practice your integration skills. At least two of these problems will appear on Test III, and at least one will appear on the final.

**1.**  $\int \cos^7 x \, dx$

**11.**  $\int (e^{3 \ln x})^2 \, dx$

**21.**  $\int \frac{\arccos x}{\sqrt{1-x^2}} \, dx$

**2.**  $\int x \sec x \tan x \, dx$

**12.**  $\int \frac{\ln 2x}{x^2} \, dx$

**22.**  $\int \sin^{-1} x \, dx$

**3.**  $\int \cot^6 x \, dx$

**13.**  $\int x^3 \sin x \, dx$

**23.**  $\int 2\pi x(8 - x^{\frac{3}{2}}) \, dx$

**4.**  $\int \csc^4 x \cot^4 x \, dx$

**14.**  $\int_0^1 \ln(1+3x) \, dx$

**24.**  $\int_0^{\frac{\pi}{2}} \sin^2 x \cos^5 x \, dx$

**5.**  $\int \sin^2 x \cos^2 x \, dx$

**15.**  $\int \frac{\sqrt{x}}{1-x\sqrt{x}} \, dx$

**25.**  $\int e^x \cos 2x \, dx$

**6.**  $\int \sin(\ln x) \, dx$

**16.**  $\int \sin^4 3x \, dx$

**26.**  $\int \ln\left(\frac{x^3}{2x+1}\right) \, dx$

**7.**  $\int \frac{\sin^3 x}{\sqrt{\cos x}} \, dx$

**17.**  $\int (\ln x)^3 \, dx$

**27.**  $\int \csc^3 x \, dx$

**8.**  $\int \tan^3 x \sec^3 x \, dx$

**18.**  $\int (x \ln x)^{-1} \, dx$

**28.**  $\int_1^2 \frac{x^2 + 3x + 7}{\sqrt{x}} \, dx$

**9.**  $\int \tan x \ln(\cos x) \, dx$

**19.**  $\int \csc 3x \, dx$

**29.**  $\int (\sin x + e^x)^2 \, dx$

**10.**  $\int_1^3 \frac{e^{\frac{1}{x}}}{x^2} \, dx$

**20.**  $\int x^3 \cos x^2 \, dx$

**30.**  $\int x(x+5)^{\frac{7}{2}} \, dx$