

Math 1B Practice Integrals

Try to figure out what technique (or combination of techniques) will work on each integral, before you start solving it. A good way to practice guessing the technique is to skim through the chapter 7 homework problems, and look for patterns and similarities among the integrals in each particular section.

Feel free to ask about any of these integrals during office hours or the midterm review session.

$$\int_1^e x^n \ln x \, dx$$

$$\int \sec^3 \theta \, d\theta$$

$$\int \sqrt{1+x^2} \, dx$$

$$\int t^2 \cos 3t \, dt$$

$$\int_0^1 \sqrt{1+x^{1/3}} \, dx$$

$$\int \sqrt{1+x^{2/3}} \, dx$$

$$\int \frac{\sin^3(2+\sqrt{x})}{\sqrt{x}} \, dx$$

$$\int \frac{dx}{x^3-x}$$

$$\int \frac{dx}{x^3-1}$$

$$\int_0^\infty \sin^2 t \, e^{-t} \, dt$$

$$\int \frac{dx}{x+x^{1/3}}$$

$$\int_0^{2\pi} \sin^4 x \, dx$$

$$\int_0^\infty x^5 e^{-x^2} \, dx$$

$$\int \tan^5 t \cos^8 t \, dt$$

$$\int \ln^2 x \, dx$$

$$\int \tan^5 t \sec^5 t \, dt$$

$$\int \frac{x^5}{\sqrt{x^2+2}} \, dx$$

$$\int_0^{\pi/2} \sin^4 x \cos^4 x \, dx$$

$$\int_{-1/2}^0 \sqrt{x^2+x} \, dx$$

$$\int x^{3/2} \sqrt{x+1/x+1} \, dx$$

$$\int_0^\infty (e^t+1)^{-1} \, dt$$

$$\int_0^1 x^3 \sqrt{1-x^8} \, dx$$

$$\int \frac{dx e^{x/4}}{e^{x/2} + e^{x/3}}$$

$$\int \csc^6 \theta \cot^8 \theta \, d\theta$$

$$\int (t \cos t)^2 \, dt$$

$$\int (e^{2x}-1)^{-1/3} \, dx$$

$$\int \frac{dt}{(e^t-1)^{1/3}}$$

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