

Practice this sheet to become an integral Sith Lord (+C)! Cover the answers on the right, and check your answers one at a time. Or, fold the paper in half, write your answers to all the integrals, unfold the paper, then check all your answers.

Note: This is just some core practice. You'll want to get practice from the homework, notes, and practice problems, too.

1. $\int (x^3 - 5x^2 + 4x + 2) dx$	1. $\frac{1}{4}x^4 - \frac{5}{3}x^3 + 2x^2 + 2x + C$
2. $\int 2e^{-3x} dx$	2. $-\frac{2}{3}e^{-3x} + C$
3. $\int \sqrt{x} dx$	3. $\frac{2}{3}x^{3/2} + C$
4. $\int \frac{1}{x} dx$	4. $\ln x + C$
5. $\int \sqrt[3]{x} dx$	5. $\frac{3}{4}x^{4/3} + C$
6. $\int \frac{1}{\sqrt{x}} dx$	6. $2\sqrt{x} + C$
7. $\int \frac{3}{x} dx$	7. $3\ln x + C$
8. $\int 5e^{-x} dx$	8. $-5e^{-x} + C$
9. $\int \frac{1}{x^2} dx$	9. $-\frac{1}{x} + C$
10. $\int 4x^{-1} dx$	10. $4\ln x + C$
11. $\int 5\sqrt{x} dx$	11. $\frac{10}{3}x^{3/2} + C$
12. $\int \frac{\ln x}{x} dx$	12. $\frac{(\ln x)^2}{2} + C$
13. $\int xe^x dx$	13. $xe^x - e^x + C$
14. $\int xe^{x^2} dx$	14. $\frac{e^{x^2}}{2} + C$
15. $\int x^3(5x^4 + 2)^5 dx$	15. $\frac{1}{120}(5x^4 + 2)^6 + C$
16. $\int x \ln x dx$	16. $\frac{1}{2}x^2 \ln x - \frac{1}{4}x^2 + C$
17. $\int \frac{x^2}{e^x} dx$	17. $-x^2e^{-x} - 2xe^{-x} - 2e^{-x} + C$
18. $\int \frac{3x-3}{(x^2-2x+6)^2} dx$	18. $-\frac{3}{2(x^2-2x+6)} + C$
19. $\int \frac{e^{\sqrt{x}}}{\sqrt{x}} dx$	19. $2e^{\sqrt{x}} + C$
20. $\int \frac{x}{\sqrt{x+3}} dx$	20. $\frac{2}{3}(x+3)^{3/2} - 6(x+3)^{1/2} + C$