The following integrals use the techniques you must know. Write out your solutions for each integral.

1. $\int e^x dx.$
2. $\int \frac{dx}{e^x}.$
3. $\int \frac{e^x+1}{e^x} dx.$
4. $\int \frac{e^x}{e^x+1} dx.$
5. $\int e^{2x} dx.$
6. $\int xe^x dx.$
7. $\int xe^{x^2} dx.$
8. $\int \frac{1}{x} dx.$
9. $\int \frac{1}{x^2} dx.$
10. $\int \frac{1}{x^2+1} dx.$
11. $\int \frac{1}{x^2-1} dx.$
12. $\int \frac{x}{x^2+1} dx.$
13. $\int \frac{x}{x^2-1} dx.$
14. $\int \frac{1}{x^2+2x+1} dx.$
15. $\int \frac{1}{x^2+2x-3} dx.$
16. $\int \frac{1}{x^2+2x+5} dx.$
17. $\int \sin(x) dx.$
18. $\int \sin(2x) dx.$
19. $\int \sin^2(x) dx.$
20. $\int \sin^3(x) dx.$
21. $\int \sin(x)\cos(x) dx.$
22. $\int \sec^2(x) dx.$
23. $\int \sec(x) dx.$
24. $\int \sec^3(x) dx.$
25. $\int \tan(x) dx.$
26. $\int \tan^2(x) dx.$
27. $\int \frac{dx}{\sec(x)}.$
28. $\int x\sin(x) dx.$
29. $\int e^x \sin(x) dx.$
30. $\int \ln(x^2) dx.$
31. $\int (\ln(x))^2 dx.$
32. $\int \ln(x) dx.$
33. $\int x\ln(x) dx.$
34. $\int \frac{x^2+1}{x^2(x+1)} dx.$
35. $\int \frac{-3}{(x-3)(x-4)} dx.$
36. $\int \frac{dx}{\sqrt{x}+\sqrt[3]{x}}.$