Antidifferentiation Practice

We can write the general antiderivative of $f(x)$ as $F(x) = \int f(x)\,dx$ (note that there are no upper or lower bounds). Here's some practice finding antiderivatives. For some problems, we need to use some algebra first.

1. $\int (x^2 + x^{-2}\,dx$
2. $\int (\sqrt{x^3} + \sqrt[3]{x^2})\,dx$
3. $\int \left(x^3 + \frac{1}{4}x^2 + 2 + \frac{1}{x}\right)\,dx$
4. $\int x(x^2 + 1)\,dx$
5. $\int \sin(x) + \cos(x)\,dx$
6. $\int \frac{8}{\sqrt{1 - x^2}}\,dx$
7. $\int x^e + e^x\,dx$
8. $\int \frac{1}{x^2} - \frac{4}{x^3}\,dx$
9. $\int \frac{\sqrt{y} - y}{y^2}\,dy$
10. $\int x^2 + 1 + \frac{1}{x^2 + 1}\,dx$