Problem 1 *Evaluate the integral*

(a) $\int_{-2}^{3}(x^2 - 3)dx$

(b) $\int_{0}^{4}(3\sqrt{t} - 2e^t)dt$

(c) $\int_{-10}^{10}\dfrac{2e^x}{\sinh x + \cosh x}dx$

(d) $\int\limits_{0}^{\frac{1}{\sqrt{3}}}\dfrac{t^2 - 1}{t^4 - 1}dt$

Problem 2 *Find the general indefinite integral.*

(a) $\int (x^{-2} + x^2) dx$

(b) $\int (\sqrt{x^3} + \sqrt[3]{x^2}) dx$

(c) $\int \dfrac{\sin 2t}{\sin t} dt$

Problem 3 *What are all the different ways we can write $F'(x) = f(x)$?*