

Homework 1

Find the following antiderivatives.

$$1. \int \frac{1}{\sqrt{3-y^2}} dy = \text{Arcsin}\left(\frac{y}{\sqrt{3}}\right) + C$$

$$2. \int x^6 + 5\sqrt{x^3} + \frac{7}{x^3} - \frac{24}{x} dx = \frac{x^7}{7} + \frac{20x^{\frac{7}{4}}}{7} - \frac{7}{2x^2} - 24 \ln x + C$$

$$3. f'(u) = 3^u + e^u, \quad f(0) = 0 \quad f(u) = \frac{3^u}{\ln 3} + e^u - 1 - \frac{1}{\ln 3}$$

$$4. g'(x) = \sin x + \sec^2 x, \quad g(0) = 2 \quad g(x) = -\cos x + \tan x + 3$$