

Do you remember anything from Calc I?

Find the derivative of each of the following functions.

1. $f(x) = (x^4 - 3x^2 + 5)^3$

2. $y = \sqrt{x} + \frac{1}{\sqrt[3]{x^4}}$

3. $f(x) = xe^{-1/x}$

4. $y = \frac{\sin^{-1} t}{1 - t^2}$

5. $y = \ln(x^2 + x)$

Evaluate each integral.

1. $\int_1^2 5x^2 - 4x + 3 \, dx$

2. $\int_4^8 \frac{1}{x} \, dx$

3. $\int_0^{\pi/4} \cos x \, dx$

4. $\int 1 + \frac{1}{x^2} \, dx$

5. $\int_0^2 3e^x \, dx$