CALCULUS II | Homework 0326 | Name:
DR. PAUL L. BAILEY | Wednesday, March 24, 2021

The solutions to these problems are due Friday, March 26, 2021. Please figure out how to solve these integrals, and then write your solutions neatly onto this page.

Problem 1. Compute (divide, then partial fractions):

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

Problem 2. Compute (factor, then partial fractions):

$$\int \frac{dx}{x^3 - 2x^2 + 4x - 8}.$$

Problem 3. Compute (substitute $x = 3\sin\theta$):

$$\int \frac{\sqrt{9-x^2}}{x^2}\,dx.$$

Problem 4. Compute (substitute $u = e^t$, then $u = 3\tan\theta$):

$$\int_0^{\ln 4} \frac{e^t dx}{\sqrt{e^{2t}+9}}.$$