Problem Set
Section 7.8

Improper Integrals

Problem 1

Determine whether the integral $\int_0^9 \frac{1}{x\sqrt{x}} dx$ is convergent or divergent. If it is convergent, find its value

Problem 2

Determine whether the integral $\int_0^\infty xe^{-10x}dx$ is convergent or divergent. If it is convergent, find its value

Problem 3

Evaluate $\int_{-1}^{3} \frac{1}{\sqrt{|x-1|}} dx$.

Problem 4

Evaluate (if possible) $\int_{-1}^{\infty} \frac{dx}{(4+3x)^{3/2}}$.

Problem 5

Evaluate (if possible) $\int_{-\infty}^{0} \frac{x}{(x^2+2)^{3/2}} dx$.