

(1) [8] Use the trapezoid rule on $n = 6$ subintervals to approximate

$$\int_0^3 \frac{1}{1+x^2} dx$$

You may leave your answer in a “calculator ready” form; that is, you may leave it as an unsimplified sum of fractions.

(2) [7] Evaluate the improper integral

$$\int_1^{\infty} \frac{\ln x}{x^2} dx$$

making proper use of any required limits.