(1) Determime $\displaystyle\int \frac{36}{(x+5)^2(x-1)}\,dx$

[8]

(2)   Use the midpoint rule with $n = 2$ subintervals to evaluate $\displaystyle\int_0^\pi x^2 \sin x \, dx$

[4]

(3)   Evaluate the following improper integral making proper use of any required limits: $\displaystyle\int_1^\infty \frac{\ln x}{x} \, dx$

[3]