Math 1221: Recitation 4 (T)

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(1) Solve the following integrals.

(a) $\int \frac{7}{x^2 - x - 56} dx$

(b) $\int \frac{8x^3}{1 + x^2} dx$

(2) Solve the following questions. **(Do any one of them)**.

(a) $\int \frac{e^x}{100 - e^{2x}} dx$

(b) Determine whether the improper integral $\int_0^1 \frac{\ln x}{\sqrt{x}} dx$ converges or diverges. If the integral converges, determine the value of the integral.

Bonus . (Do any one of them).

(a) Approximate $\int_4^6 \frac{1}{\ln x} dx$ using the midpoint rule with four subdivisions. You need to write the intervals and leave it in raw form.

(b) Determine whether the improper integral $\int_3^5 \frac{1}{(x-4)^2} dx$ converges or diverges. If the integral converges, determine the value of the integral.

(c) Solve the integral $\int \frac{2x^2+4x+54}{x^2+2x+26} dx$. *(A little hard).*