

HW 7 Due : Friday, Oct. 11

(1)

(7.4 Problem 22) $\int \frac{3x^2 + 4x + 3}{(x^2 + 1)^2} dx$

(2)

$$\int \frac{4x + 3}{x^2 + 2x + 10} dx$$

(3)

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

(4) (Problems from Sec 7.4) Determine whether each integral is convergent or divergent. If the integral is convergent, compute its value.

(a) $\int_1^{\infty} \frac{1}{x^{\frac{2}{3}}} dx$

(b) $\int_e^{\infty} \frac{1}{x \ln x} dx$

(c) $\int_e^{\infty} \frac{1}{x(\ln x)^2} dx$

(d) $\int_e^{\infty} \frac{\ln x}{x^2} dx$

(e) $\int_{-\infty}^{\infty} x^5 dx$

(5) Extra Practice Problems (These are extra problems for you to practice and you can check the answers at the back of the book)

Sec 7.3 Problem 21, 25, 51

Sec 7.4 Problem 9, 17, 23, 25