Math 1497 − Calculus II Spring 2024 − Homework 3

Week 3: Jan. 29 - Feb. 2, 2024

pg. 557, #5, 7, 9, 11, 12, 20, 21 and 23.

Partial Fractions

5. $\displaystyle\int \frac{5}{x^2+3x-4}\,dx$
7. $\displaystyle\int \frac{x^2+12x+12}{x^3-4x}\,dx$
9. $\displaystyle\int \frac{2x^3-4x^2-15x+5}{x^2-2x-8}\,dx$
11. $\displaystyle\int \frac{4x^2+2x-1}{x^3+x^2}\,dx$
12. $\displaystyle\int \frac{5x-2}{(x-2)^2}\,dx$
20. $\displaystyle\int \frac{x^2+6x+4}{x^4+8x^2+16}\,dt$
21. $\displaystyle\int_0^2 \frac{3}{4x^2+5x+1}\,dx$
23. $\displaystyle\int_1^2 \frac{x+1}{x(x^2+1)}\,dx$

pg. 579, #17, 19, 25, 33, 35 and 48.

Improper Integrals

17. $\displaystyle\int_2^\infty \frac{1}{x^2}\,dx$
19. $\displaystyle\int_1^\infty \frac{3}{x^{1/3}}\,dx$
25. $\displaystyle\int_4^\infty \frac{1}{x(\ln x)^3}\,dx$
33. $\displaystyle\int_0^1 \frac{1}{x^2}\,dx$
35. $\displaystyle\int_0^2 \frac{1}{(x-1)^{1/3}}\,dx$
48. $\displaystyle\int_1^\infty \frac{1}{x\ln x}\,dx$

Due: Friday Feb. 2, 2024 by 3pm.