Math 1497 – Calculus II Spring 2022 – Homework 2

Week 2: Jan. 24-28, 2022

pg. 538-9, #3, 5, 7, 11, 22, 25, 28, 31, 60 and 65.

Trig Integrals

3. $\int \cos^5 x \sin x dx$
5. $\int \cos^3 x \sin^4 x \, dx$
7. $\int \sin^3 x \cos^2 x \, dx$
11. $\int \cos^2 3x \, dx$
22. $\int \sec^4 x \, dx$
25. $\int \tan^5 \frac{x}{2} \, dx$
28. $\int \tan^5 x \sec^4 x \, dx$
31. $\int \sec^5 x \tan^3 x \, dx$
60. $\int_0^{\pi/3} \tan^2 x \, dx$
65. $\int_{-\pi/2}^{\pi/2} 3\cos^3 \, dx$

pg. 547, #5, 7, 12, 20, 21 37, 39, and 42.

Trig Substitutions

5. $\int \frac{\sqrt{16-x^2}}{x} \, dx$
7. $\int \frac{1}{\sqrt{x^2-25}} \, dx$
12. $\int \frac{x^3}{4\sqrt{4+x^2}} \, dx$
20. $\int \frac{1}{\sqrt{x^2-4}} \, dx$
21. $\int \frac{\sqrt{1-x^2}}{x^4} \, dx$
37. $\int_0^{\sqrt{3}/2} \frac{t^2}{(1-t^3)^{3/2}} \, dt$
39. $\int_0^3 \frac{x^3}{\sqrt{x^2+9}} \, dx$
42. $\int_4^8 \frac{\sqrt{x^2-16}}{x^2} \, dx$

Due: Friday Jan. 28, 2022 by 4pm.