

Math 1497 – Calculus II Spring 2024 – Homework 1

Week 1: Jan. 15-19, 2024

pg. 341-2, #37, 39, 41, 47, 49, 53, 65, 67, 73, 77, 81 and 83.

u– substitution

$$37. \int \cos 6x \, dx$$

$$41. \int \sin 2x \cos 2x \, dx$$

$$49. \int \frac{5 - e^x}{e^{2x}} \, dx$$

$$65. \int x\sqrt{x+6} \, dx$$

$$73. \int_{-1}^1 x(x^2 + 1)^3 \, dx$$

$$81. \int_3^4 4xe^{x^2} \, dx$$

$$39. \int \frac{1}{\theta^2} \cos \frac{1}{\theta} \, d\theta$$

$$47. \int e^x (e^x + 1)^2 \, dx$$

$$53. \int e^{-x} \sec^2(e^{-x}) \, dx$$

$$67. \int x^2 \sqrt{1-x} \, dx$$

$$77. \int_0^4 \frac{1}{\sqrt{2x+1}} \, dx$$

$$83. \int_1^3 \frac{e^{3/x}}{x^2} \, dx$$

pg. 529-530, #15, 17, 19, 20, 22, 31, 43, 45, 47, 49.

Integration by Parts

$$15. \int xe^{4x} \, dx$$

$$19. \int t \ln(t+1) \, dt$$

$$22. \int \frac{\ln x}{x^3} \, dx$$

$$43. \int_0^3 xe^{x/2} \, dx$$

$$47. \int_0^{1/2} \arccos x \, dx$$

$$17. \int x^3 e^x \, dx$$

$$20. \int x^5 \ln 3x \, dx$$

$$31. \int \arctan x \, dx$$

$$45. \int_0^{\pi/4} x \cos 2x \, dx$$

$$49. \int_0^1 e^x \sin x \, dx$$

Due: Friday Jan. 19, 2024 by 3pm.