

MAT 371 ORDINARY DIFFERENTIAL EQUATIONS

These integrals use techniques you need to know.

Prepare solutions for Thursday, August 29th, 2013.

$$(1) \int e^x dx \quad (2) \int \frac{1}{e^x} dx \quad (3) \int \frac{e^x + 1}{e^x} dx \quad (4) \int \frac{e^x}{e^x + 1} dx$$

$$(5) \int e^{2x} dx \quad (6) \int x e^x dx \quad (7) \int x e^{x^2} dx \quad (8) \int \frac{dx}{x}$$

$$(9) \int \frac{dx}{x^2} \quad (10) \int \frac{dx}{x^2 + 1} \quad (11) \int \frac{dx}{x^2 - 1} \quad (12) \int \frac{x dx}{x^2 + 1}$$

$$(13) \int \frac{x dx}{x^2 - 1} \quad (14) \int \frac{dx}{x^2 + 2x + 1} \quad (15) \int \frac{dx}{x^2 + 2x - 3} \quad (16) \int \frac{dx}{x^2 + 4x + 13}$$

$$(17) \int \sin x dx \quad (18) \int \sin(2x) dx \quad (19) \int \sin^2 x dx \quad (20) \int \sin^3 x dx$$

$$(21) \int \sin x \cos x dx \quad (22) \int \sec x dx \quad (23) \int \sec^2 x dx \quad (24) \int \sec^3 x dx$$

$$(25) \int \tan x dx \quad (26) \int \tan^2 x dx \quad (27) \int \frac{dx}{\sec x} \quad (28) \int x \sin x dx$$

$$(29) \int e^x \sin x dx \quad (30) \int \ln(x^2) dx \quad (31) \int (\ln x)^2 dx \quad (32) \int \ln x dx$$

$$(33) \int x \ln x dx \quad (34) \int \frac{x^2 + 1}{x^2(x + 1)} dx \quad (35) \int \frac{dx}{(x^2 + 1)(x^2 + 4)} \quad (36) \int \frac{dx}{(x^2 - 1)(x^2 - 4)}$$