# MAT 371 ORDINARY DIFFERENTIAL EQUATIONS

**These integrals use techniques you need to know.**

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

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

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

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

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

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

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

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

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