

Trigonometric Identities

$$\sin(A + B) = \sin(A) \cos(B) + \cos(A) \sin(B)$$

$$\sin(A - B) = \sin(A) \cos(B) - \cos(A) \sin(B)$$

$$\cos(A + B) = \cos(A) \cos(B) - \sin(A) \sin(B)$$

$$\cos(A - B) = \cos(A) \cos(B) + \sin(A) \sin(B)$$

$$\sin(2A) = 2 \sin(A) \cos(A)$$

$$\cos(2A) = \cos^2(A) - \sin^2(A)$$

$$\int \sec(x) \, dx = \ln |\sec(x) + \tan(x)| + C$$

$$\int \csc(x) \, dx = -\ln |\csc(x) + \cot(x)| + C$$

Error Estimates

$$|E_T| \leq \frac{M(b-a)^3}{12n^2}, \quad f''(x) \leq M \text{ for all } x \in [a, b]$$

$$|E_S| \leq \frac{M(b-a)^5}{180n^4}, \quad f^{(4)}(x) \leq M \text{ for all } x \in [a, b]$$