Τυπολόγιο

$$\cos(y-x) = \cos x\cos y + \sin x \sin y, \quad \sin\left(\frac{x}{2}\right) = \pm\sqrt{\frac{1-\cos x}{2}}$$
$$\sin 2x = 2\sin x\cos x, \quad \cos 2x = \cos^2 x - \sin^2 x = 2\cos^2 x - 1 = 1 - 2\sin^2 x$$
$$\sin x + \sin y = 2\sin\left(\frac{x+y}{2}\right)\cos\left(\frac{x-y}{2}\right), \quad \cos x + \cos y = 2\cos\left(\frac{x+y}{2}\right)\cos\left(\frac{x-y}{2}\right)$$
$$\sin x - \sin y = 2\cos\left(\frac{x+y}{2}\right)\sin\left(\frac{x-y}{2}\right), \quad \cos x - \cos y = -2\sin\left(\frac{x+y}{2}\right)\sin\left(\frac{x-y}{2}\right)$$
$$\sin x\sin y = \frac{1}{2}\left[\cos(x-y) - \cos(x+y)\right], \quad \cos x\cos y = \frac{1}{2}\left[\cos(x+y) + \cos(x-y)\right]$$
$$\sin x\cos y = \frac{1}{2}\left[\sin(x+y) + \sin(x-y)\right], \quad \cos x < \frac{\sin x}{x} < \frac{1}{\cos x}, \ \cos\left(\frac{x}{2}\right) = \pm\sqrt{\frac{1+\cos x}{2}}$$

$\forall\epsilon > 0\ \exists\delta > 0 : 0 < |x-c| < \delta \Rightarrow |f(x) - L| < \epsilon.$ $\quad\forall\epsilon > 0\ \exists\delta > 0 : c < x < c+\delta \Rightarrow |f(x) - L| < \epsilon.$

$\forall\epsilon > 0\ \exists\delta > 0 : c-\delta < x < c \Rightarrow |f(x) - L| < \epsilon.$ $\quad\forall\epsilon > 0 \exists X \in \mathbb{R} : x > X \Rightarrow |f(x) - L| < \epsilon.$

$\forall\epsilon > 0 \exists X \in \mathbb{R} : x < X \Rightarrow |f(x) - L| < \epsilon.$ $\quad\forall M \in \mathbb{R} \exists\delta > 0 : 0 < |x-c| < \delta \Rightarrow f(x) > M.$

$\forall M \in \mathbb{R} \exists X \in \mathbb{R} : x > X \Rightarrow f(x) > M.$ $\quad\forall\epsilon > 0 \exists N \in \mathbb{N} : n > N \Rightarrow |a_n - L| < \epsilon.$

$$|f(x) - f(x_0)| \le C|x - x_0|, \quad |f(y) - f(x)| \le C|y - x|$$
$$(\arcsin y)' = \frac{1}{\sqrt{1-y^2}}, \quad (\arccos y)' = -\frac{1}{\sqrt{1-y^2}}, \quad (\arctan y)' = \frac{1}{1+y^2}$$
$$f(\theta x_0 + (1-\theta)x_1) < \theta f(x_0) + (1-\theta)f(x_1)$$
$$L(f,P) \triangleq \sum_{i=1}^{n} m_i(t_i - t_{i-1}), \quad U(f,P) \triangleq \sum_{i=1}^{n} M_i(t_i - t_{i-1}), \quad \sum_{i=1}^{n} f(x_i)(t_i - t_{i-1})$$
$$\left\{\begin{array}{l} x = r\cos\theta, \\ y = r\sin\theta \end{array}\right\} \Leftrightarrow \left\{\begin{array}{c} r = \sqrt{x^2+y^2}, \\ \cos\theta = \frac{x}{\sqrt{x^2+y^2}}, \ \sin\theta = \frac{y}{\sqrt{x^2+y^2}} \end{array}\right\}$$
$$\frac{1}{2}\int_a^b f^2(\theta)\,d\theta, \quad \pi\int_a^b f^2, \quad 2\pi\int_a^b xf(x)\,dx, \quad \int_a^b A(t)\,dt, \quad \int_a^b \sqrt{(f'(x))^2 + (g'(x))^2}\,dx$$
$$y' + P(x)y = Q(x), \quad y(x) = [S(x) + C]\exp[-R(x)]$$

$$P_{n,a}(x) \quad \triangleq \quad f(a) + f'(a)(x-a) + \frac{f''(a)}{2}(x-a)^2 + \cdots + \frac{f^{(n)}(a)}{n!}(x-a)^n$$
$$y(x) = \left\{y_0 + \int_{x_0}^{x} Q(u)\exp\left[\int_{x_0}^{u} P(t)\,dt\right]du\right\}\exp\left[-\int_{x_0}^{x} P(t)\,dt\right]$$
$$E_n(x) = \frac{1}{n!}\int_a^x (x-t)^n f^{(n+1)}(t)\,dt, \quad |E_n(x)| \le M\frac{|x-a|^{n+1}}{(n+1)!}$$
$$s_n = \sum_{k=1}^{n} f(k), \quad t_n = \int_1^n f(x)\,dx$$
$$S = \sum_{k=1}^{\infty}(-1)^{k-1}a_k, \quad s_n = \sum_{k=1}^{n}(-1)^{k-1}a_k, \quad 0 < (-1)^n(S - s_n) < a_{n+1}$$
$$A_\parallel = \left[\frac{A\cdot B}{\|B\|^2}\right]B, \quad A_\perp = A - A_\parallel, \quad (x-x_0, y-y_0)(A,B) = 0 \Leftrightarrow Ax + By = Ax_0 + By_0$$
$$\begin{vmatrix} x-x_0 & y-y_0 & z-z_0 \\ x_1 & y_1 & z_1 \\ x_2 & y_2 & z_2 \end{vmatrix} = 0, \quad \begin{vmatrix} x-x_0 & y-y_0 & z-z_0 \\ x_1-x_0 & y_1-y_0 & z_1-z_0 \\ x_2-x_0 & y_2-y_0 & z_2-z_0 \end{vmatrix} = 0,$$
$$A(x-x_0) + B(y-y_0) + C(z-z_0) = 0 \Leftrightarrow Ax + By + Cz = Ax_0 + By_0 + Cz_0$$

$$y^2 = 4px, \quad \frac{x^2}{a^2} + \frac{y^2}{a^2(1-\epsilon^2)} = 1 \Leftrightarrow \frac{x^2}{a^2} + \frac{y^2}{b^2} = 1, \quad \frac{x^2}{a^2} - \frac{y^2}{a^2(\epsilon^2-1)} = 1 \Leftrightarrow \frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$$
$$\left\{\begin{array}{l} u = (x-x_0)\cos\theta + (y-y_0)\sin\theta, \\ v = -(x-x_0)\sin\theta + (y-y_0)\cos\theta \end{array}\right\} \Leftrightarrow \begin{pmatrix} u \\ v \end{pmatrix} = \begin{pmatrix} \cos\theta & \sin\theta \\ -\sin\theta & \cos\theta \end{pmatrix}\begin{pmatrix} x-x_0 \\ y-y_0 \end{pmatrix}$$
$$\left\{\begin{array}{l} x = x_0 + u\cos\theta - v\sin\theta, \\ y = y_0 + u\sin\theta + v\cos\theta \end{array}\right\} \Leftrightarrow \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} x_0 \\ y_0 \end{pmatrix} + \begin{pmatrix} \cos\theta & -\sin\theta \\ \sin\theta & \cos\theta \end{pmatrix}\begin{pmatrix} u \\ v \end{pmatrix}$$
$$\begin{pmatrix} u \\ v \end{pmatrix} = \begin{pmatrix} x-x_0 \\ y-y_0 \end{pmatrix} \Leftrightarrow \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} x_0+u \\ y_0+v \end{pmatrix}, \quad \theta = \frac{1}{2}\text{arccot}\frac{A-C}{B}$$
$$\begin{vmatrix} x_0 & y_0 & z_0 \\ x_1 & y_1 & z_1 \\ x_2 & y_2 & z_2 \end{vmatrix} = x_0\begin{vmatrix} y_1 & z_1 \\ y_2 & z_2 \end{vmatrix} - y_0\begin{vmatrix} x_1 & z_1 \\ x_2 & z_2 \end{vmatrix} + z_0\begin{vmatrix} x_1 & y_1 \\ x_2 & y_2 \end{vmatrix}, \quad \begin{vmatrix} x_0 & y_0 \\ x_1 & y_1 \end{vmatrix} = x_0y_1 - x_1y_0.$$