

جامعة بغداد

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مركز التخطيط الحضري والاقليمي للدراسات العليا

CENTER OF URBAN & REGIONAL PLANNING
FOR POSTGRADUATE STUDIES

مكتابة البحث العلمي

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$\frac{d}{dx} x^a = a x^{a-1}$ $\frac{d}{dx} \frac{1}{x} = -\frac{1}{x^2}$ $\frac{d}{dx} \ln|x| = \frac{1}{x}$ $\int \frac{dx}{x^2+a^2} = \frac{1}{a} \arctan\left(\frac{x}{a}\right) + C$ $(a+b)^2 = a^2 + 2ab + b^2$
 $x^n = \frac{d}{dx} \frac{x^{n+1}}{n+1}$ $e^{-x} = -e^{-x}$ $\vec{A} \cdot (\vec{B} + \vec{C}) = \vec{A} \cdot \vec{B} + \vec{A} \cdot \vec{C}$ $y = kx + m$
 $\begin{vmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{vmatrix} = \begin{vmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{vmatrix} + \begin{vmatrix} 1 & 2 & 3 \\ 7 & 8 & 9 \end{vmatrix}$ $\sin^2 \alpha + \cos^2 \alpha = 1$ $\sinh x = -i \sin(ix)$
 $e^x = \lim_{x \rightarrow 0} \frac{e^x - 1}{x} = 1$ $f(x) = \frac{1}{\sigma \sqrt{2\pi}} \exp\left(-\frac{(x-\mu)^2}{2\sigma^2}\right)$ $U = \int_{-\infty}^{\infty} f(x) dx$
 $\begin{pmatrix} c_1 \\ c_2 \end{pmatrix} = \begin{pmatrix} a_1 c_1 + b_1 c_2 \\ a_2 c_1 + b_2 c_2 \end{pmatrix}$ $\forall x > 0 \exists N \in \mathbb{N} \forall n > N$
 $i = \sqrt{-1}$ $e^{ix} = \cos x + i \sin x$ $\int x^n dx = \frac{x^{n+1}}{n+1} + C$
 $\sum_{k=0}^{\infty} \frac{x^k}{k!} = e^x$ $\sin x = \cos(x - \frac{\pi}{2})$ $\log(xy) = \log x + \log y$
 $a \perp m, a^{(m)} \equiv 1 \pmod{m}$ $\log(ab) = \log a + \log b$
 $\log_a x = \frac{\log x}{\log a}$ $S = \frac{1}{2} ab \sin \alpha$ $y = x^2$
 $\left(1 + \frac{1}{n}\right)^n \rightarrow e$ $\cos 2\alpha = 2 \cos^2 \alpha - 1$ $\ln(a-b)$
 $\frac{d}{dx} \frac{1}{x} = -\frac{1}{x^2}$ $\sum_{n=0}^k \frac{f^{(n)}(a)}{n!} (x-a)^n$ $e^x \cos x = \operatorname{Re}\{e^{ix}\}$ $x! = \Gamma(x+1)$

















