


<p style="text-align: center;">Kingdom of Saudi Arabia Ministry of Higher Education KING SAUD UNIVERSITY <i>Deanship of Scientific Research</i> <i>College of Science Research Center</i></p>		<p>جامعة الملك سعود</p>
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316 (1430-1429)

$$H_n(x) e^{2tx-t^2} = \sum_{n=0}^{\infty} \frac{1}{n!} H_n(x) t^n : \quad x \in \mathbb{R}, t \in \mathbb{R} \quad ($$

$$f(x) = 1 - x^3, -1 < x < 1 : \quad .[-1,1] \quad P_n(x) \quad ($$

$$. P_n(x)$$

$$f(x + 2\pi) = f(x) \quad f(x) = x^2, \pi < x < -\pi : \quad ($$

$$\sum_{n=1}^{\infty} \frac{(-1)^n}{n^2} \quad \sum_1^{\infty} \frac{1}{n^2} :$$

$$2i) xP'_n - nP_n = P'_n \quad i) xP'_n - nP_n = -P'_n : \quad ($$

$$4i) xP'_n - P_n = -P'_{n-1} \quad 3i) nP'_n - xP_n = -P'_{n-1}$$

$$\int_0^{\infty} \frac{\cos(\pi\xi) + \xi \sin(\pi\xi) d\xi}{1+\xi^2} = \pi e^{-\pi} : \quad f(x) = \begin{cases} e^{-x}, & x > 0 \\ 0, & x < 0 \\ \frac{1}{2}, & x = 0 \end{cases} ($$

$$f(x) = \begin{cases} 1, & |x| < a \\ 0, & -\pi < x < -a, a < x < \pi \end{cases} : \quad (-\pi, \pi) \quad f \quad ($$