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1) PARA VEDIFICAR A CONVERGÊNCIA DA SÉRIE
$S = \sum_{n=1}^{\infty} \frac{(2n)!}{(n!)^2 5^n}$
revenus utilizar o Teste do Razão:
$\frac{\lim_{n \to \infty} \left \frac{S_{n+1}}{S_n} \right = \lim_{n \to \infty} \left \frac{(2(n+1))!}{((n+1)!)^2 5^{n+1}} \right \frac{(2n)!}{(n!)^2 5^n}$
$= \lim_{n \to \infty} \frac{(2(n+n)!)!}{((n+1)!)^2 5^{n+1}} \frac{(n!)^2 5^n}{(2n)!}$
$= \lim_{n \to \infty} \frac{(2n+2)(2n+1)(2n)!}{(n+1)^2(n+1)^2(n+1)^2 \cdot 5 \cdot 5^n} \cdot (2n)!$
$= \lim_{n \to \infty} \frac{4n^2 + 6n + 2}{5n^2 + 10n + 5} = \lim_{n \to \infty} \frac{4 + \frac{5}{n} + \frac{2}{n^2}}{5} = \frac{4}{5}$
4 < 1, ENTRO A SÉRIE CONVERGE
2) A Série de McLaurin para uma função f aumante é dan ren rádima $S = \sum_{n=0}^{\infty} f^{(n)}(n) \times f^{(n)}(n) = \int_{0}^{\infty} f^{(n)}(n) \cdot dn$
$\frac{1}{n=0} \frac{1}{n!}$
PARA CHEGOR A LUM EXPRESSÃO DE S VALUOS VER AS PRIMEIRAS REPLADAS DE FIXX=(1+x) In(1+x)

DEBNADA PRIMEIRA: $\frac{\partial}{\partial x} + (x) = \frac{\partial}{\partial x} + (4+x) \ln(1+x) = \frac{\partial}{\partial x} \ln(x+1) + \frac{\partial}{\partial x} \times \ln(x+1)$ $= \frac{1}{x+1} + \frac{1}{x+1} \ln(x+1) = \frac{1}{1+\ln(x+1)} + \frac{\partial}{\partial x} \times \ln(x+1)$ DECNADA SEGUNDA: $\frac{\partial}{\partial x} + (\frac{\partial}{\partial x} + (x)) = \frac{\partial}{\partial x} + (1+\ln(x+1)) = \frac{1}{x+1} = (x+1)^{-0} \cdot (-1)^{2}$ DECNADA TEOLEGÍA: $\frac{\partial}{\partial x} + (\frac{\partial}{\partial x} + (x)) = \frac{\partial}{\partial x} + (1+\ln(x+1)) = \frac{1}{x+1} = (x+1)^{-0} \cdot (-1)^{2}$ DECNADA CULTAR: $\frac{\partial}{\partial x} + (\frac{\partial}{\partial x} + (x)) = \frac{1}{(x+1)^{2}} = (x+1)^{-2} \cdot (1+(-1))^{3}$ DECNADA CULTAR: $\frac{\partial}{\partial x} + (\frac{\partial}{\partial x} + (x)) = \frac{2}{(x+1)^{3}} = (x+1)^{-3} \cdot (2+(-1))^{4}$ DECNADA CULTAR: $\frac{\partial}{\partial x} + (\frac{\partial}{\partial x} + (x)) = \frac{2}{(x+1)^{3}} = (x+1)^{-4} \cdot (2+(-1))^{4}$ DECNADA CULTAR: $\frac{\partial}{\partial x} + (\frac{\partial}{\partial x} + (x)) = \frac{2}{(x+1)^{3}} = (x+1)^{-4} \cdot (2+(-1))^{4}$ DECNADA CULTAR: $\frac{\partial}{\partial x} + (\frac{\partial}{\partial x} + (x)) = \frac{2}{(x+1)^{3}} = (x+1)^{-4} \cdot (2+(-1))^{4}$ DECNADA CULTAR: $\frac{\partial}{\partial x} + (\frac{\partial}{\partial x} + (x)) = \frac{2}{(x+1)^{3}} = (x+1)^{-3} \cdot (2+(-1))^{4}$ DECNADA CULTAR: $\frac{\partial}{\partial x} + (\frac{\partial}{\partial x} + (x)) = \frac{2}{(x+1)^{3}} = (x+1)^{-3} \cdot (2+(-1))^{4}$ DECNADA CULTAR: $\frac{\partial}{\partial x} + (\frac{\partial}{\partial x} + (x)) = \frac{1}{(x+1)^{3}} = (x+1)^{-3} \cdot (2+(-1)^{3})$ DECNADA CULTAR: $\frac{\partial}{\partial x} + (\frac{\partial}{\partial x} + (x)) = \frac{\partial}{\partial x} + (x+1)^{-2} \cdot (x+1)^{-3} = (x+1)^{-3} \cdot (x+1)^{-3} \cdot (x+1)^{-3} = (x+1)^{-3} \cdot (x+1)^$
$ \begin{array}{c} = \underbrace{1}_{X+1} \underbrace{x+1}_{X+1} \\ x+1 \underbrace{x+1}_{X+1} \\ & \\ \hline \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ &$
PEONODA SEGUNDA: $\frac{1}{3}$
DECRMODA SECURION: $\frac{3}{3} \times (\frac{3}{3} \times f(x)) = \frac{3}{3} \times (1 + lm(x+1)) = \frac{1}{x+1} = (x+1)^{-1} 0! (-1)^{2}$ DECRMODA TEOGRIPA: $\frac{3}{3} \times (\frac{3}{3} \times f(x)) = \frac{-1}{(x+1)^{2}} = (x+1)^{-2} 1! (-1)^{3}$ TEQUADA CRAPATA: $\frac{3}{3} \times (\frac{3}{3} \times f(x)) = \frac{2}{(x+1)^{3}} = (x+1)^{-3} 2! (-1)^{4}$ TEQUADA CRUMTA: $\frac{3}{3} \times (\frac{3}{3} \times f(x)) = \frac{-6}{(x+1)^{4}} = (x+1)^{-4} 3! (-1)^{5}$ A PROTIE DA TEQUADA SEGUNDA TEMOU UM PROPRO ENTED $S = (1+0) \ln(1+0) + x + \sum_{n=2}^{\infty} (n-2)! (-1)^{n} x^{n}$ $N = \sum_{n=2}^{K+1} = \lim_{n \to \infty} (K-1)! (-1)^{K+1} x^{K+1} / (K-2)! (-1)^{K} x^{K} / (K$
SECUMOR SECUMOR: $\frac{3}{3}$ ($\frac{3}{3}$ ($\frac{3}{3}$ (1+ lm(x+1)) = $\frac{1}{x+1}$ = (x+1) 0! (-1) ² OCERMORA TEOCEMA. $\frac{3}{3}$ ($\frac{3}{3}$ ($\frac{3}{3}$ (x)) = $\frac{2}{3}$ (1+ lm(x+1)) = $\frac{1}{x+1}$ = (x+1) 0! (-1) ² TECHNORA TEOCEMA. $\frac{3}{3}$ ($\frac{3}{3}$ ($\frac{3}{3}$ (x)) = $\frac{-1}{(x+1)^3}$ = (x+1) ⁻² 1! (-1) ³ TECHNORA COMPATA. $\frac{3}{3}$ ($\frac{3}{3}$ (x)) = $\frac{2}{(x+1)^3}$ = (x+1) ⁻³ 2! (-1) ⁴ TECHNORA COMPATA. $\frac{3}{3}$ ($\frac{3}{3}$ (x)) = $\frac{-6}{(x+1)^4}$ = (x+1) ⁻⁴ 3! (-1) ⁵ A PROBLE DA TECHNORA SECONDA TEMOS UM PERGÃO ENTÃO $S = (1+0) \ln(1+0) + x + \int_{n=2}^{\infty} (n-2)! (-1)^n x^n$ $S = (1+0) \ln(1+0) + x + \int_{n=2}^{\infty} (n-2)! (-1)^n x^n$ $N = \frac{1}{n!}$ $N = \frac{1}{n}$ N
DESIMPLY TEOURISE. $\frac{1}{3} \times \left(\frac{3}{3} \times \frac{1}{2} \times (x)\right) = \frac{1}{(x+1)^2} = (x+1)^{-2} \cdot \frac{1}{1} \cdot (-1)^3$ THE PRIME OF
DEPLYADO TEOREIRO. $\frac{1}{3} \times \left(\frac{3}{3} \times \frac{2}{5} + (x)\right) = \frac{(x+1)^2}{(x+1)^3} = (x+1)^{-2} \frac{1}{5} \cdot (-1)^{\frac{1}{3}}$ TEORINGO OMAPTA. $\frac{3}{3} \times \left(\frac{3}{3} \times \frac{3}{5} + (x)\right) = \frac{2}{(x+1)^3} = (x+1)^{-3} \frac{2}{5} \cdot (-1)^{\frac{1}{4}}$ TEORINGO OMAPTA. $\frac{3}{3} \times \left(\frac{3}{3} \times \frac{1}{5} + (x)\right) = \frac{2}{(x+1)^4} = (x+1)^{-4} \frac{3}{3} \cdot (-1)^{\frac{1}{5}}$ TEORINGO OMAPTA. $\frac{3}{3} \times \left(\frac{3}{3} \times \frac{1}{5} + (x)\right) = \frac{2}{(x+1)^4} = (x+1)^{-4} \frac{3}{3} \cdot (-1)^{\frac{1}{5}}$ TEORINGO OMAPTA. $\frac{3}{3} \times \left(\frac{3}{3} \times \frac{1}{5} + (x)\right) = \frac{2}{(x+1)^4} = (x+1)^{-4} \frac{3}{3} \cdot (-1)^{\frac{1}{5}}$ THEORINGO OMAPTA. $\frac{3}{3} \times \left(\frac{3}{3} \times \frac{1}{5} + (x)\right) = \frac{2}{(x+1)^4} = (x+1)^{-4} \frac{3}{3} \cdot (-1)^{\frac{1}{5}}$ THEORINGO OMAPTA. $\frac{3}{3} \times \left(\frac{3}{3} \times \frac{1}{5} + (x)\right) = \frac{2}{(x+1)^4} = (x+1)^{-4} \frac{3}{3} \cdot (-1)^{\frac{1}{5}}$ THEORINGO OMAPTA. $\frac{3}{3} \times \left(\frac{3}{3} \times \frac{1}{5} + (x)\right) = \frac{2}{(x+1)^{-4}} = (x+1)^{-4} \frac{3}{3} \cdot (-1)^{\frac{1}{5}}$ THEORINGO OMAPTA. $\frac{3}{3} \times \left(\frac{3}{3} \times \frac{1}{5} + (x)\right) = \frac{2}{(x+1)^{-4}} = (x+1)^{-4} \frac{3}{3} \cdot (-1)^{\frac{1}{5}}$ THEORINGO OMAPTA. $\frac{3}{3} \times \left(\frac{3}{3} \times \frac{1}{5} + (x)\right) = \frac{2}{(x+1)^{-4}} = (x+1)^{-4} \frac{3}{3} \cdot (-1)^{\frac{1}{5}}$ THEORINGO OMAPTA. $\frac{3}{3} \times \left(\frac{3}{3} \times \frac{1}{5} + (x)\right) = \frac{2}{(x+1)^{-4}} = (x+1)^{-4} \frac{3}{3} \cdot (-1)^{\frac{1}{5}}$ THEORINGO OMAPTA. $\frac{3}{3} \times \left(\frac{3}{3} \times \frac{1}{5} + (x)\right) = \frac{2}{(x+1)^{-4}} = (x+1)^{-4} \frac{3}{3} \cdot (-1)^{\frac{1}{5}}$ THEORINGO OMAPTA. $\frac{3}{3} \times \left(\frac{3}{3} \times \frac{1}{5} + (x)\right) = \frac{2}{(x+1)^{-4}} = (x+1)^{-4} \frac{3}{3} \cdot (-1)^{\frac{1}{5}}$ THEORINGO OMAPTA. $\frac{3}{3} \times \left(\frac{3}{3} \times \frac{1}{5} + (x)\right) = \frac{2}{(x+1)^{-4}} = (x+1)^{-4} \frac{3}{3} \cdot (-1)^{\frac{1}{5}}$ THEORINGO OMAPTA. $\frac{3}{3} \times \left(\frac{3}{3} \times \frac{1}{5} + (x)\right) = \frac{2}{(x+1)^{-4}} = (x+1)^{-4} \frac{3}{3} \cdot (-1)^{\frac{1}{5}}$ THEORINGO OMAPTA. $\frac{3}{3} \times \left(\frac{3}{3} \times \frac{1}{5} + (x)\right) = \frac{2}{(x+1)^{-4}} = (x+1)^{-4} \frac{3}{3} \cdot (-1)^{\frac{1}{5}}$ THEORINGO OMAPTA. $\frac{3}{3} \times \left(\frac{3}{3} \times \frac{1}{3} + (x)\right) = \frac{2}{(x+1)^{-4}} \times \left(\frac{3}{3} \times \frac{1}{3} + (x)\right) = \frac{2}{(x+1)^{-4}} \times \left(\frac{3}{3} \times \frac{1}{3} + (x)\right) = \frac{2}{(x+1)^{-4}} \times \left(\frac{3}{3} \times \frac{1}{3} + (x)\right) = \frac$
$\frac{1}{100} \frac{1}{100} 1$
DECLIVACE QUINTA: $\frac{1}{3}$ $\left(\frac{3}{4}$ $\frac{4}{5}$ $\frac{1}{5}$ $\frac{1}$
A PARTIR OR TREADURA SEGUNDA TEMOS UM PARTÃO ENTRO $ S = (1+0) n(1+0) + x + \int_{n=2}^{\infty} (n-2)! (-1)^n x^n $ $ VIILIZANDO O TESTE OR ROZÃO NO SOURTÓGIO ACIMA, TEMOS \lim_{K \to \infty} \left \sum_{n=2}^{K+1} = \lim_{K \to \infty} (K-1)! (-1)^{K+1} x^{K+1} \middle/ (K-2)! (-1)^K x^K \middle K^{1} \middle/ (K-2)! (-1)^K x^K \middle K^{1} \middle/ (K-1)! $
$S = \frac{(1+0) \ln(1+0) + x + \sum_{n=2}^{\infty} \frac{(n-2)! (-1)^n x^n}{n!}}{n!}$ $U_{\text{TILIZANDO}} \circ \text{Teste on } \text{Razão no somation acum, temas}$ $\lim_{K \to \infty} \frac{\sum_{n=2}^{K+1}}{\sum_{n=2}^{K}} = \lim_{K \to \infty} \frac{(K-1)! (-1)^{K+1} x^{K+1}}{(K+1)!} \frac{(K-2)! (-1)^K x^K}{K!}$ $= \lim_{K \to \infty} \frac{(1-K)x}{-(1-K)} \frac{(1-K)x}{(1-K)} \frac{(1-K)x}{(1-K)} \frac{(1-K)x}{(1-K)}$ $= \lim_{K \to \infty} \frac{(1-K)x}{-(1-K)} \frac{(1-K)x}{(1-K)} \frac{(1-K)x}{(1-K)}$ $= \lim_{K \to \infty} \frac{(1-K)x}{-(1-K)} \frac{(1-K)x}{(1-K)} \frac{(1-K)x}{(1-K)}$
UTILIZANDO O TESTE DA RAZÃO NO SOUATÓRIO ACIMA, TEMAS $ \lim_{K \to \infty} \frac{\sum_{n=2}^{K+1}}{\sum_{n=2}^{K}} = \lim_{K \to \infty} \frac{(K-1)! (-1)^{K+1} \times K^{+1}}{(K+1)!} \frac{(K-9)! (-1)^{K} \times K^{-1}}{(K+1)!} $ $ = \lim_{K \to \infty} \frac{(1-K) \times X }{(1-K)} \times \frac{1}{(1-K)} \times \frac{1}{(1-K)} $ COUDIÇÃO DE CONVERGENCIA
UTILIZANDO O TESTE DA ROZÃO NO SOUATÓRIO ACIMA, TEMAS $ \lim_{K \to \infty} \frac{\sum_{n=2}^{K+1}}{\sum_{n=2}^{K}} = \lim_{K \to \infty} \frac{(K-1)! (-1)^{K+1} \times K^{+1}}{(K+1)!} \frac{(K-9)! (-1)^{K} \times K^{-1}}{(K+1)!} $ $ = \lim_{K \to \infty} \frac{(1-K) \times 1}{(1-K)} \times \frac{1}{(1-K)} \times \frac{1}{(1-K)} $ COUDIÇÃO DE CONVERGENCIA
UTILIZANDO O TESTE DA RAZÃO NO SOUNTÓRIO ACIMA, TEMAS $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
$ \lim_{K \to \infty} \sum_{n=2}^{K+1} = \lim_{K \to \infty} \frac{(K-1)! (-1)^{K+1}}{(K-1)!} \times \frac{(K-1)! (-1)^{K}}{(K-1)!} \times \frac{(K-1)! (-1)^{K}}{(K-1)!} \times \frac{(K-1)!}{(K-1)!} $
$ \lim_{K\to\infty} \sum_{n=2}^{K+1} = \lim_{K\to\infty} \frac{(K-1)!(-1)^{K+1}}{(K-1)!(-1)^{K+1}} \times \frac{(K-2)!(-1)^{K}}{(K-2)!(-1)^{K}} \times \frac{(K-2)!(-1)!(-1)^{K}}{(K-2)!(-1)^{K}} \times \frac{(K-2)!(-1)!(-1)^{K}}{(K-2)!(-1)^{K}} \times (K-2)!(-1)!(-1)$
$ m = m (1-K) \times = m (K-1)! (-1) \times m ($
$= \lim_{K \to \infty} \frac{-(1-K)}{(1-K)} \times \frac{1}{(K+1)!}$ $= \lim_{K \to \infty} \frac{-(1-K)}{(1-K)} \times \frac{1}{(K+1)!}$ $= \lim_{K \to \infty} \frac{1-x}{(1-x)}$ $= \lim_{K \to \infty} \frac{1-x}{(1-x)}$
$= \lim_{K \to \infty} \frac{(1-K)}{(1-K)} \times \frac{1}{(1-K)} $
K-100 -(1-K) CONDICTO DE CONVERTENCIO K-100
K-100 -(1-K) CONDICTO DE CONVERSENCIO K-00
THE CONVERGENCIA
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ENTRO A SEME CONVERGE FIRM X E (-! ()

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