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① $F(x) = \dfrac{1}{(2+x)^2} = 1 + x + x^2 + x^3 + \ldots$

$= \dfrac{1}{(2+x)^2} = \dfrac{1}{(2)^2} + \dfrac{1}{(2+x)^2} + \dfrac{1}{((2+x)^2)^2} + \dfrac{1}{((2+x)^2)^3}$

$= \dfrac{1}{4} + \dfrac{1}{4}x + \dfrac{3}{16}x^2 - \dfrac{1}{8}x^3$

② $\displaystyle\sum_{n=1}^{\infty} \dfrac{n\,2n-1}{(-3)^{n-1}}$

$a_n = \dfrac{n\,2n-1}{(-3)n-1}$

$a_{n+1} = \dfrac{n+1\,2(n+1)-1}{(-3)(n+1)-1} = \dfrac{(n+1)\,2n}{(-3)n}$

$L = \lim_{n\to\infty} \left| a_{n+1} \cdot \dfrac{1}{a_n} \right|$

$L = \lim_{n\to\infty} \left| \dfrac{(n+1)\,2n}{(-3)n} \cdot \dfrac{(-3)n-1}{n\,2n-1} \right|$

$= \lim_{n\to\infty} \left(x - \dfrac{1}{x^2} \right) = \infty$

$= \left(-\dfrac{2}{3} \right) \dfrac{-3}{\infty}$

$= 0 \longrightarrow P < 1$ maka kemvergen

③ $\int_0^1 \dfrac{6x^3 + 5x^2 - 12x + 6}{2x^2 + 3x - 2} \, dx$

$= \dfrac{A_1}{2x^2} + \dfrac{A_2}{3x} + \dfrac{B_1 + C_1}{2x^2 + 3x - 2}$

$= \dfrac{A_1 2x^2 (2x^2 + 3x - 2) + A_2 (2x^2 + 3x - 2) + (B_1 + C_1)}{2x^2 + 3x - 2}$

❋ Mohon maaf pak saya kurang mengerti pada bagian ini.