

⊞—GaussLaguerre Coefficients —————

⊞—GaussLegendre Coefficients —————

Answer for Jean

$$f(x) := \frac{4}{x^2 + 1}$$

$a := 0$

$b := 1$

$I := \pi$

Setup

$$Int_G(f(1), a, b, G) := \left[\begin{array}{l} c := \frac{a+b}{2} \quad h := \frac{b-a}{2} \quad X := \text{eval}(c + h \cdot \text{UnitsOf}(c) \cdot \text{col}(G, 1)) \\ [N := \text{rows}(G) \text{ Clear}(n)] \\ h \cdot \sum_{n=1}^N G_{n,2} \cdot f(X_n) \end{array} \right]$$

$$\int_a^b f(x) dx - I = 5.9656 \cdot 10^{-15}$$

With Gauss Laguerre

<https://keisan.casio.com/exec/system/1280801905>

$$Int_G(f(x), a, b, \text{GaussLaguerre}_{50}) - I = 2.502 \cdot 10^{-15}$$

With Gauss Legendre

<https://pomax.github.io/bezierinfo/legendre-gauss.html>

$$Int_G(f(x), a, b, \text{GaussLegendre}_{50}) - I = 6.218 \cdot 10^{-9}$$

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