

$$f := (x, n) \rightarrow \sum_{k=0}^n \frac{x^k}{k!}$$

$$f := (x, n) \mapsto \sum_{k=0}^n \frac{x^k}{k!} \quad (1)$$

$$f(x, 5)$$

$$1 + x + \frac{1}{2} x^2 + \frac{1}{6} x^3 + \frac{1}{24} x^4 + \frac{1}{120} x^5 \quad (2)$$

$$\int_{-2}^6 f(x, 4) dx$$

$$\frac{2696}{15} \quad (3)$$

$$\text{evalf}(\%)$$

$$179.7333333 \quad (4)$$

$$\int f(x, 4) dx$$

$$x + \frac{1}{2} x^2 + \frac{1}{6} x^3 + \frac{1}{24} x^4 + \frac{1}{120} x^5 \quad (5)$$

$$f(-x^2, 4)$$

$$1 - x^2 + \frac{1}{2} x^4 - \frac{1}{6} x^6 + \frac{1}{24} x^8 \quad (6)$$

$$\int 1 - x^2 + \frac{1}{2} x^4 - \frac{1}{6} x^6 + \frac{1}{24} x^8 dx$$

$$x - \frac{1}{3} x^3 + \frac{1}{10} x^5 - \frac{1}{42} x^7 + \frac{1}{216} x^9 \quad (7)$$

$$F(x) := x \rightarrow x - \frac{1}{3} x^3 + \frac{1}{10} x^5 - \frac{1}{42} x^7 + \frac{1}{216} x^9$$

$$F(x) := x \mapsto x - \frac{1}{3} x^3 + \frac{1}{10} x^5 - \frac{1}{42} x^7 + \frac{1}{216} x^9 \quad (8)$$

$$F(6) - F(-2)$$

Error, (in int) integration range or variable must be specified in the second argument, got 6

$$x - \frac{1}{3} x^3 + \frac{1}{10} x^5 - \frac{1}{42} x^7 + \frac{1}{216} x^9$$

$$x - \frac{1}{3} x^3 + \frac{1}{10} x^5 - \frac{1}{42} x^7 + \frac{1}{216} x^9 \quad (9)$$

$$F := x \rightarrow x - \frac{1}{3} x^3 + \frac{1}{10} x^5 - \frac{1}{42} x^7 + \frac{1}{216} x^9$$

$$F := x \mapsto x - \frac{1}{3} x^3 + \frac{1}{10} x^5 - \frac{1}{42} x^7 + \frac{1}{216} x^9 \quad (10)$$

$$F(6)$$

$$\frac{1424586}{35} \quad (11)$$

$$F(-2) \quad -\frac{1754}{945} \quad (12)$$

$$F(6) - F(-2) \quad \frac{38465576}{945} \quad (13)$$

$$\text{evalf}(\%) \quad 40704.31323 \quad (14)$$

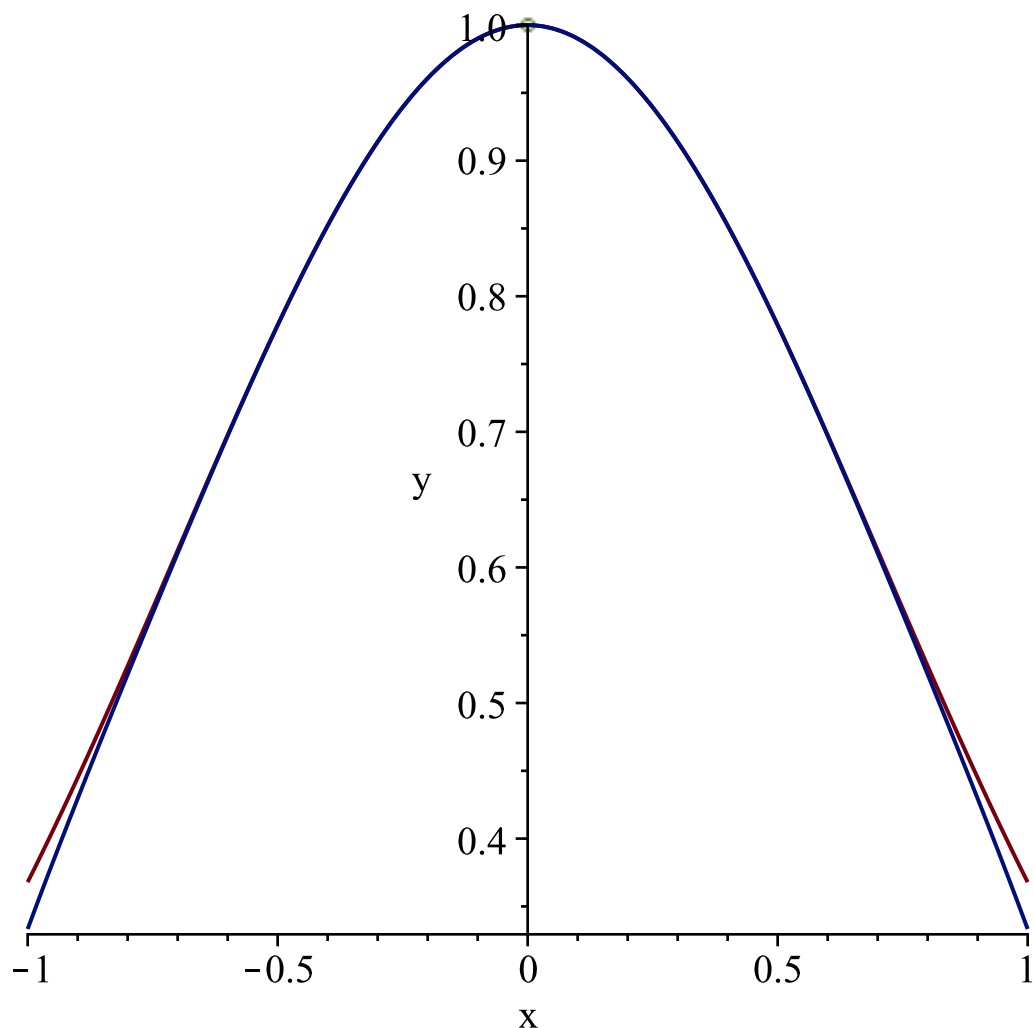
$$\left(\sum_{n=0}^5 x^n \right) \cdot \left(\sum_{n=0}^5 \frac{x^n}{n!} \right) \quad (x^5 + x^4 + x^3 + x^2 + x + 1) \left(1 + x + \frac{1}{2} x^2 + \frac{1}{6} x^3 + \frac{1}{24} x^4 + \frac{1}{120} x^5 \right) \quad (15)$$

$$\text{sort}(\text{expand}(\%)) \quad \frac{1}{120} x^{10} + \frac{1}{20} x^9 + \frac{13}{60} x^8 + \frac{43}{60} x^7 + \frac{103}{60} x^6 + \frac{163}{60} x^5 + \frac{65}{24} x^4 + \frac{8}{3} x^3 + \frac{5}{2} x^2 + 2x + 1 \quad (16)$$

DO OVER!!!

$$f := x \mapsto 1 - \frac{x^3}{3} + \frac{x^5}{10} - \frac{x^7}{42} \quad f := x \mapsto 1 - \frac{1}{3} x^3 + \frac{1}{10} x^5 - \frac{1}{42} x^7 \quad (17)$$

$$f(6) - f(-2) \quad -\frac{208672}{35} \quad (18)$$



with(Student[CalculusI])

[AntiderivativePlot, AntiderivativeTutor, ApproximateInt, ApproximateIntTutor, ArcLength, ArcLengthTutor, Asymptotes, Clear, CriticalPoints, CurveAnalysisTutor, DerivativePlot, DerivativeTutor, DiffTutor, Distance, ExtremePoints, FunctionAverage, FunctionAverageTutor, FunctionChart, FunctionPlot, GetMessage, GetNumProblems, GetProblem, Hint, InflectionPoints, IntTutor, Integrand, InversePlot, InverseTutor, LimitTutor, MeanValueTheorem, MeanValueTheoremTutor, NewtonQuotient, NewtonsMethod, NewtonsMethodTutor, PointInterpolation, RiemannSum, RollesTheorem, Roots, Rule, Show, ShowIncomplete, ShowSolution, ShowSteps, Summand, SurfaceOfRevolution, SurfaceOfRevolutionTutor, Tangent, TangentSecantTutor, TangentTutor, TaylorApproximation, TaylorApproximationTutor, Understand, Undo, VolumeOfRevolution, VolumeOfRevolutionTutor, WhatProblem]

(19)

TaylorApproximation(exp(-x²), 0, 'degree'= 14, 'output'='polynomial');

$$1 - x^2 + \frac{1}{2} x^4 - \frac{1}{6} x^6 + \frac{1}{24} x^8 - \frac{1}{120} x^{10} + \frac{1}{720} x^{12} - \frac{1}{5040} x^{14}$$

(20)

$$\int_{-2}^6 \left(1 - x^2 + \frac{1}{2} x^4 - \frac{1}{6} x^6 + \frac{1}{24} x^8 - \frac{1}{120} x^{10} + \frac{1}{720} x^{12} - \frac{1}{5040} x^{14} \right) dx$$

$$-\frac{3417664056392}{675675} \quad (21)$$

evalf(%)

$$-5.058147862 \cdot 10^6 \quad (22)$$

$$f := x \mapsto x - \frac{x^3}{3} + \frac{1}{2} \cdot \frac{x^5}{5} - \frac{x^7}{42}$$

$$f := x \mapsto x - \frac{1}{3} x^3 + \frac{1}{10} x^5 - \frac{1}{42} x^7 \quad (23)$$

$f(6) - f(-2)$

$$-\frac{208392}{35} \quad (24)$$