

$$\text{Solve} \left[\int_j^k a e^{-\frac{(x-\frac{j+k}{2})^2}{0.5(k-j)-0.5}} dx = 1, a \right]$$

In[500]= $\left\{ \left\{ a \rightarrow -\left(\left(0.7978845608028653 \sqrt{\log(e)} \right) / \left(\sqrt{j-1. k+1.} \operatorname{erfi} \left(\left(\sqrt{\log(e)} (0.7071067811865475 j - 0.7071067811865475 k) \right) / \left(\sqrt{j-1. k+1.} \right) \right) \right) \right\} \right\}$

a2[j, k] := $-\left(\left(0.7978845608028653 \sqrt{\log(e)} \right) / \left(\sqrt{j-1. k+1.} \operatorname{erfi} \left(\left(\sqrt{\log(e)} (0.7071067811865475 j - 0.7071067811865475 k) \right) / \left(\sqrt{j-1. k+1.} \right) \right) \right) \right)$

Out[500]= $\left\{ \left\{ a \rightarrow -\frac{0.797885 \sqrt{\log[e]}}{\sqrt{1. + j - 1. k} \operatorname{Erfi} \left[\frac{(0.707107 j - 0.707107 k) \sqrt{\log[e]}}{\sqrt{1. + j - 1. k}} \right]} \right\} \right\}$

$$a(j, k) := - \frac{\sqrt{\frac{2}{\pi}}}{\sqrt{j-1. k+1.} \operatorname{erfi} \left(\frac{\frac{j}{\sqrt{2}} - \frac{k}{\sqrt{2}}}{\sqrt{j-1. k+1.}} \right)}$$

In[504]= **prob[x, j, k] := a2[j, k] * e^-((x - (j + k) / 2) ^2 / (0.5 * (k - j) - 0.5))**
clear[prob]

Out[505]= **clear[prob]**

In[506]= **Integrate[prob[x, -1, 2], {x, -1, 2}]**

Out[506]= $\frac{0.666354 \operatorname{Erf} [0.948683 \sqrt{\log[e] }]}{\sqrt{\log[e]}}$

In[498]= $\frac{0.6663537719439554 \operatorname{Erf} [0.9486832980505138 \sqrt{\log[e] }]}{\sqrt{\log[e]}}$

a[-1, 2]

Out[498]= $\frac{0.666354 \operatorname{Erf} [0.948683 \sqrt{\log[e] }]}{\sqrt{\log[e]}}$

Out[499]= **0.237772 + 0. i**

In[533]= **Integrate[(0.56419) * e^-((x - ((-1) + 2) / 2) ^2 / (0.5 * (2 - (-1)) - 0.5)), {x, -1, 2}]**

$$\text{Solve} \left[\int_{-1}^2 a e^{-\frac{(x-\frac{(-1)+2}{2})^2}{0.5(2-(-1))-0.5}} dx = 1, a \right]$$

$$\text{In[537]:= } \left\{ \left\{ a \rightarrow \frac{0.5641895835477563 \sqrt{\text{Log}[e]}}{\text{Erf}\left[1.5 \sqrt{\text{Log}[e]}\right]} \right\} \right\}$$

$$\text{Solve}\left[\int_{-2}^1 a e^{-\frac{\left(x-\frac{(-2)+1}{2}\right)^2}{0.5(1-(-2))-0.5}} dx = 1, a\right]$$

$$\text{Out[537]= } \left\{ \left\{ a \rightarrow \frac{0.56419 \sqrt{\text{Log}[e]}}{\text{Erf}\left[1.5 \sqrt{\text{Log}[e]}\right]} \right\} \right\}$$

$$\text{Out[538]= } \left\{ \left\{ a \rightarrow \frac{0.56419 \sqrt{\text{Log}[e]}}{\text{Erf}\left[1.5 \sqrt{\text{Log}[e]}\right]} \right\} \right\}$$

$$\text{In[539]:= } \text{Solve}\left[\int_{-1}^1 a e^{-\frac{\left(x-\frac{(-1)+1}{2}\right)^2}{0.5(1-(-1))-0.5}} dx = 1, a\right]$$

$$\text{Out[539]= } \left\{ \left\{ a \rightarrow \frac{0.797885 \sqrt{\text{Log}[e]}}{\text{Erf}\left[1.41421 \sqrt{\text{Log}[e]}\right]} \right\} \right\}$$

$$\text{In[540]:= } \text{Solve}\left[\int_{-1}^3 a e^{-\frac{\left(x-\frac{(-1)+3}{2}\right)^2}{0.5(3-(-1))-0.5}} dx = 1, a\right]$$

$$\text{In[541]:= } \left\{ \left\{ a \rightarrow \frac{0.4606588659617807 \sqrt{\text{Log}[e]}}{\text{Erf}\left[1.6329931618554518 \sqrt{\text{Log}[e]}\right]} \right\} \right\}$$

$$\text{Solve}\left[\int_{-1}^4 a e^{-\frac{\left(x-\frac{(-1)+4}{2}\right)^2}{0.5(4-(-1))-0.5}} dx = 1, a\right]$$

$$\text{Out[541]= } \left\{ \left\{ a \rightarrow \frac{0.460659 \sqrt{\text{Log}[e]}}{\text{Erf}\left[1.63299 \sqrt{\text{Log}[e]}\right]} \right\} \right\}$$

$$\text{In[543]:= } \left\{ \left\{ a \rightarrow \frac{0.39894228040143265 \sqrt{\text{Log}[e]}}{\text{Erf}\left[1.7677669529663687 \sqrt{\text{Log}[e]}\right]} \right\} \right\}$$

$$\text{Solve}\left[\int_{-1}^5 a e^{-\frac{\left(x-\frac{(-1)+5}{2}\right)^2}{0.5(5-(-1))-0.5}} dx = 1, a\right]$$

$$\text{Out[543]= } \left\{ \left\{ a \rightarrow \frac{0.398942 \sqrt{\text{Log}[e]}}{\text{Erf}\left[1.76777 \sqrt{\text{Log}[e]}\right]} \right\} \right\}$$

$$\text{In[545]:= } \left\{ \left\{ a \rightarrow \frac{0.3568248232305542 \sqrt{\text{Log}[e]}}{\text{Erf}\left[1.8973665961010275 \sqrt{\text{Log}[e]}\right]} \right\} \right\}$$

$$\text{Solve}\left[\int_{-1}^6 a e^{-\frac{\left(x-\frac{(-1)+6}{2}\right)^2}{0.5(6-(-1))-0.5}} dx = 1, a\right]$$

$$\text{In[558]:= Solve}\left[\int_{-1}^7 a e^{-\frac{\left(x-\frac{(-1)+7}{2}\right)^2}{0.5(7-(-1))-0.5}} dx = 1, a\right]$$

$$\text{Out[558]=}\left\{\left\{a \rightarrow \frac{0.301572 \sqrt{\text{Log}[e]}}{\text{Erf}\left[2.13809 \sqrt{\text{Log}[e]}\right]}\right\}\right\}$$

$$\text{Solve}\left[\int_{-1}^8 a e^{-\frac{\left(x-\frac{(-1)+8}{2}\right)^2}{0.5(8-(-1))-0.5}} dx = 1, a\right]$$

$$\text{In[552]:= Solve}\left[\text{Sqrt}\left[3^n + 2n\right] = \text{Sqrt}\left[2\right], n\right]$$

Solve: Inverse functions are being used by Solve, so some solutions may not be found; use Reduce for complete solution information.

$$\text{In[555]:= p2} = \left\{\left\{n \rightarrow \frac{\text{Log}[3] - \text{ProductLog}\left[\frac{3 \text{Log}[3]}{2}\right]}{\text{Log}[3]}\right\}\right\}$$

$$\text{Solve}\left[\text{Sqrt}\left[3^n + 2n\right] = 1.5, n\right]$$

$$\text{Out[555]=}\left\{\left\{n \rightarrow \frac{\text{Log}[3] - \text{ProductLog}\left[\frac{3 \text{Log}[3]}{2}\right]}{\text{Log}[3]}\right\}\right\}$$

Solve: Inverse functions are being used by Solve, so some solutions may not be found; use Reduce for complete solution information.

$$\text{In[560]:=}\left\{\left\{n \rightarrow 0.372318658921087\right\}\right\}$$

$$\text{Solve}\left[\int_{-1}^9 a e^{-\frac{\left(x-\frac{(-1)+9}{2}\right)^2}{0.5(9-(-1))-0.5}} dx = 1, a\right]$$

$$\text{Out[560]=}\left\{\left\{n \rightarrow 0.372319\right\}\right\}$$

$$\text{Out[561]=}\left\{\left\{a \rightarrow \frac{0.265962 \sqrt{\text{Log}[e]}}{\text{Erf}\left[2.35702 \sqrt{\text{Log}[e]}\right]}\right\}\right\}$$