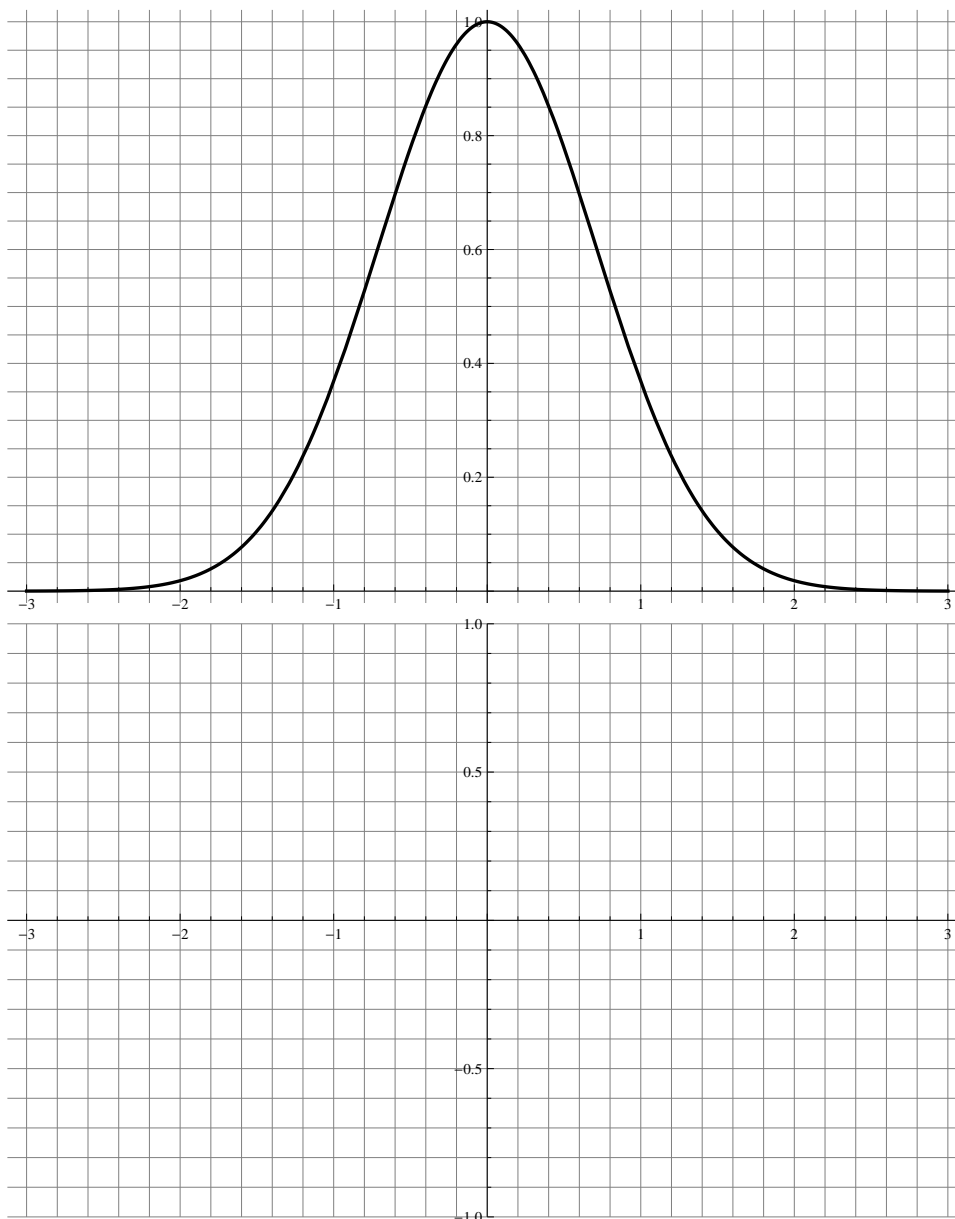


An accumulation function example

The plot below shows the graph of the function $f(u) = e^{-u^2}$ for the interval $[-3, 3]$. Use the following steps to sketch a graph of the accumulation function $A(x) = \int_0^x e^{-u^2} du$ on the blank plot below.

1. Start by determining the value of $A(0)$.
2. Estimate the value of $A(0.2)$. To do this with some quantitative accuracy, count boxes (including estimates on boxes that straddle the graph) and then multiply the count by the area for one box.
3. Continue counting boxes to estimate $A(x)$ for $x = 0.4, 0.6, \dots, 3.0$.
4. Now consider negative values of x . How does $A(-0.2)$ compare with $A(0.2)$ in this case? Use this idea to give estimates of $A(x)$ for $x = -0.2, -0.4, \dots, -3.0$.



| x | $A(x)$ |
|------|--------|
| -3.0 | |
| -2.8 | |
| -2.6 | |
| -2.4 | |
| -2.2 | |
| -2.0 | |
| -1.8 | |
| -1.6 | |
| -1.4 | |
| -1.2 | |
| -1.0 | |
| -0.8 | |
| -0.6 | |
| -0.4 | |
| -0.2 | |
| 0.0 | |
| 0.2 | |
| 0.4 | |
| 0.6 | |
| 0.8 | |
| 1.0 | |
| 1.2 | |
| 1.4 | |
| 1.6 | |
| 1.8 | |
| 2.0 | |
| 2.2 | |
| 2.4 | |
| 2.6 | |
| 2.8 | |
| 3.0 | |