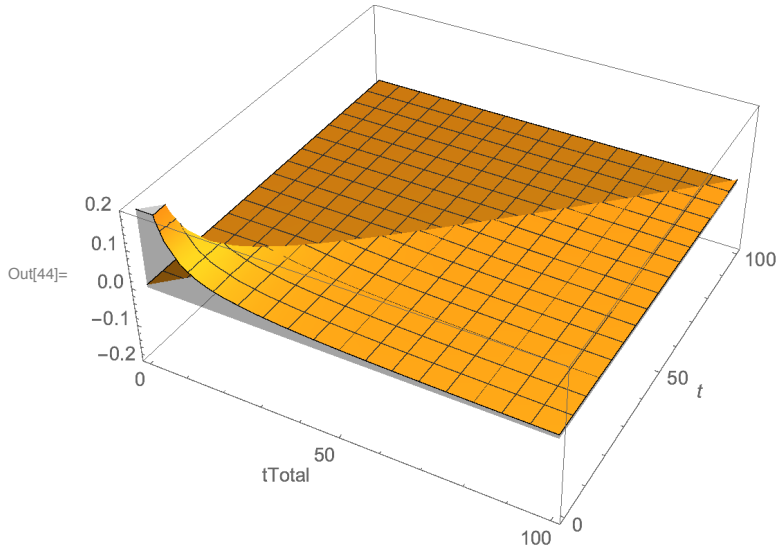# p (t | tTotal)

In[44]:= **Rasterize[#, ImageResolution → 200] &@**
  Plot3D[PDF[UniformDistribution[{0, tTotal}], t], {tTotal, 0, 100},
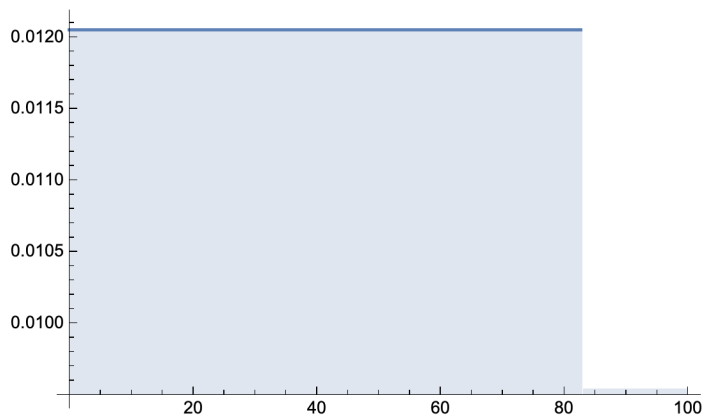   **{t, 0, 100}, PlotRange → 0.2, AxesLabel → {"t_total", "t"}, Filling → Axis]**

Out[44]=

Generative   probability

PDF[UniformDistribution[{0, 83}], t]

$$\begin{cases} \frac{1}{83} & 0 \le t \le 83 \\ 0 & \text{True} \end{cases}$$

Plot[PDF[UniformDistribution[{0, 83}], t], {t, 0, 100}, Filling → Axis]

Likelihood   function

PDF[UniformDistribution[{0, tTotal}], 18]

$$\begin{cases} \frac{1}{tTotal} & 18 \le tTotal \\ 0 & \text{True} \end{cases}$$

Plot[PDF[UniformDistribution[{0, tTotal}], 18], {tTotal, 0, 100}, Filling → Axis]