

In[]:= Solve[1 == A * Integrate[(4 x - x³), {x, 0, 2}], A]

Out[]:=

$$\left\{ \left\{ A \rightarrow \frac{1}{4} \right\} \right\}$$

In[]:= Integrate[(4 x - x³) / 4, {x, 0, 2}]

Out[]:=

1

In[]:= mean = Integrate[x (4 x - x³) / 4, {x, 0, 2}]

Out[]:=

$$\frac{16}{15}$$

In[]:= sigma = Integrate[x² (4 x - x³) / 4, {x, 0, 2}]

Out[]:=

$$\frac{4}{3}$$

In[]:= sigma2 = Sqrt[sigma - mean²] // N

Out[]:=

0.442217

In[]:= Integrate[(4 x - x³) / 4, {x, 0, 1}] // N

Out[]:=

0.4375