

```
In[1]:= Solve[1 == A * Integrate[(4x - x^3), {x, 0, 2}], A]
```

```
Out[1]=
```

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

```
In[2]:= Integrate[(4x - x^3) / 4, {x, 0, 2}]
```

```
Out[2]=
```

$$1$$

```
In[3]:= mean = Integrate[x (4x - x^3) / 4, {x, 0, 2}]
```

```
Out[3]=
```

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

```
In[4]:= sigma = Integrate[x^2 (4x - x^3) / 4, {x, 0, 2}]
```

```
Out[4]=
```

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

```
In[5]:= sigma2 = Sqrt[sigma - mean^2] // N
```

```
Out[5]=
```

$$0.442217$$

```
In[6]:= Integrate[(4x - x^3) / 4, {x, 0, 1}] // N
```

```
Out[6]=
```

$$0.4375$$