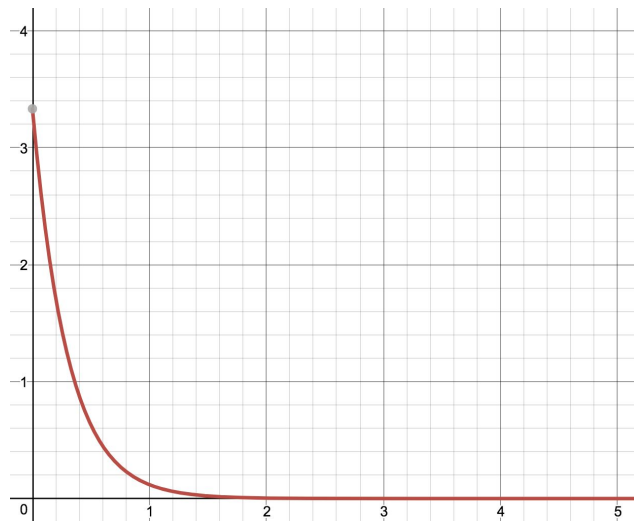


1. Create a probability distribution:



exponential distribution

$$P(x | s) = 1/Z * \exp(-1/s)$$

where  $Z=s$ ,  $s=0.3$ ,  $x \in (0, \infty)$

This is a skewed distribution

The function is at mode when  $x=0$

The probability of  $x$  is between 0 and 1 is 0.964

$$\int_0^1 \frac{\exp\left(-\frac{x}{0.3}\right)}{0.3} dx = 0.964326$$

2. Python

```
import scipy.stats as sta
```

```
print ("pdf is:", sta.expon.pdf(0.3))
```

```
print ("cdf is:", sta.expon.cdf(0.3))
```

```
print ("ppf is:", sta.expon.ppf(0.3))
```

```
pdf is: 0.7408182206817179
```

```
cdf is: 0.2591817793182821
```

```
ppf is: 0.35667494393873245
```