

0.632.

Say, we're doing bootstrap.

Let our original sample be  $x_1, x_2, \dots, x_n$ .

With **bootstrap**, we draw **with replacement**  
 $n$  draws from the original sample.

Focus on  $x_1$ .

The probability that  $x_1$  is **not** chosen in a single draw is  
 $1 - \frac{1}{n}$

But, we have  $n$  **independent** draws. So, the total probability of **never** choosing  $x_1$  is

$$\left(1 - \frac{1}{n}\right)^n \xrightarrow{n \rightarrow \infty} e^{-1} = \exp(-1) = 0.3678794$$

$$\boxed{\left(1 + \frac{1}{n}\right)^n \xrightarrow{n \rightarrow \infty} e}$$

So,  $1 - e^{-1} \approx 0.632$  is the expected proportion of the data points that do end up in the bootstrapped sample.