4) Data set D of size $|D| = d$
d times sampling with replacement from D gives a training set of d samples

Each data entry of D has probability of $\frac{1}{d}$ to get sampled.

Sampling d times results in $\left(\frac{1}{d}\right)^d$ probability to get sampled (with replacement).

Or $\left(1-\frac{1}{d}\right)^d$ probability not being sampled.

$\lim_{d\to\infty}\left(1-\frac{1}{d}\right)^d = \frac{1}{e} \approx 0.368$ not being

or $1-\frac{1}{e} = 0,632$ being selected.

Doubling drawn samples:

$\Rightarrow \lim_{d\to\infty}\left(1-\frac{1}{d}\right)^{2d} \approx \frac{1}{e^2} \approx 0,135$ not being selected or $1-0,135 \approx 0,865$ being selected.