

## Stats-2

### Skewness into data

d = [1, 2, 100, 200, 3, 4, 8, 10, 5, 2, 3, 6]

① Zero skewness (Symmetric data)



② Right skewness (Positive skewness)



③ Left skewness (Negative skewness)



$$\text{mean} = 28.66$$

$$\text{median} = 4.5$$

$$\text{mode} = 2, 3$$

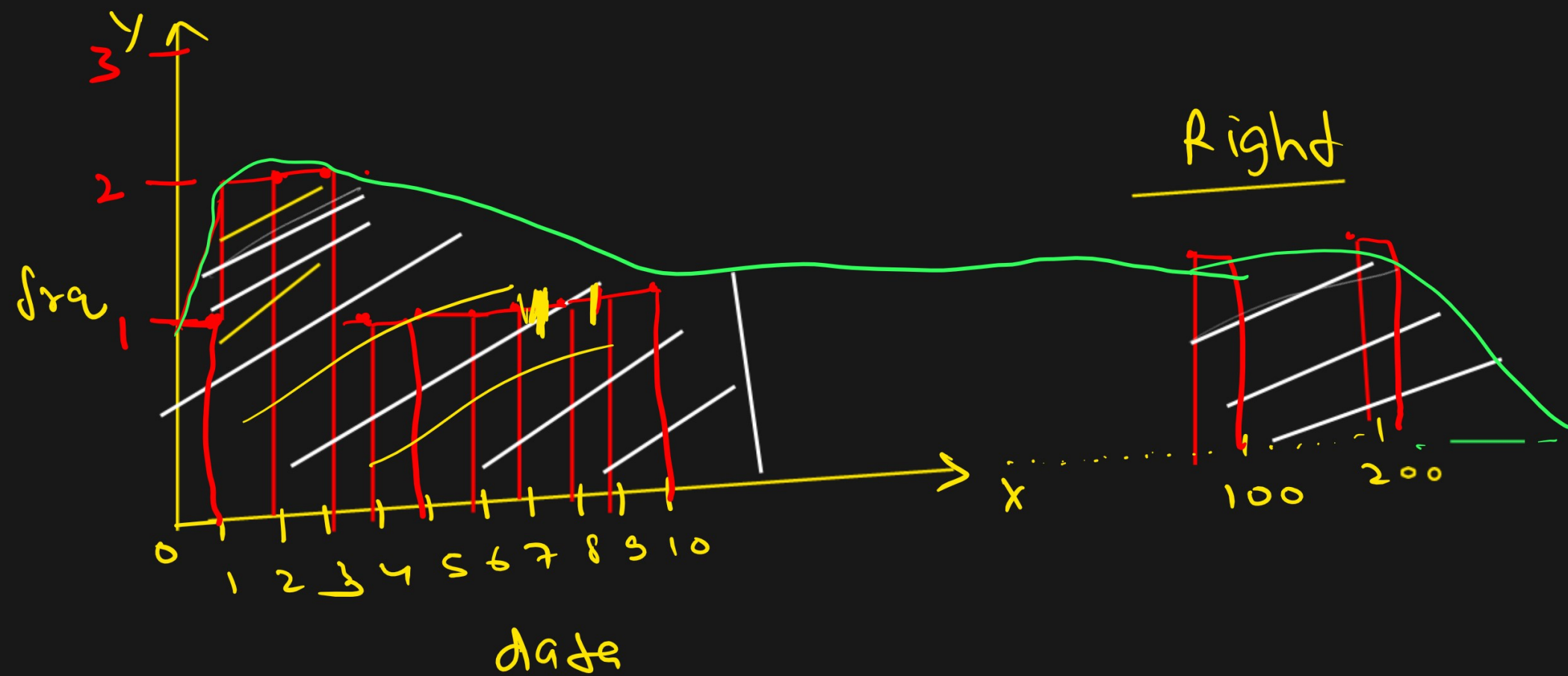
①  $\text{mean} = \text{median} = \text{mode} \rightarrow \text{zero}$

②  $\text{mean} > \text{median} > \text{mode} \rightarrow \text{positive}$

③  $\text{mean} < \text{median} < \text{mode} \rightarrow \text{negative}$

d = [1, 2, 100, 200, 3, 4, 8, 10, 5, 2, 3, 6]

(d)	(freq)
1	1
2	2
3	2
4	1
5	1
6	1
8	1
10	1
100	1
200	1



✓ Normal Distribution → Gaussian Distribution.



mean = median = mode

x Standard Normal Distribution →  $\mu = 0$  ✓

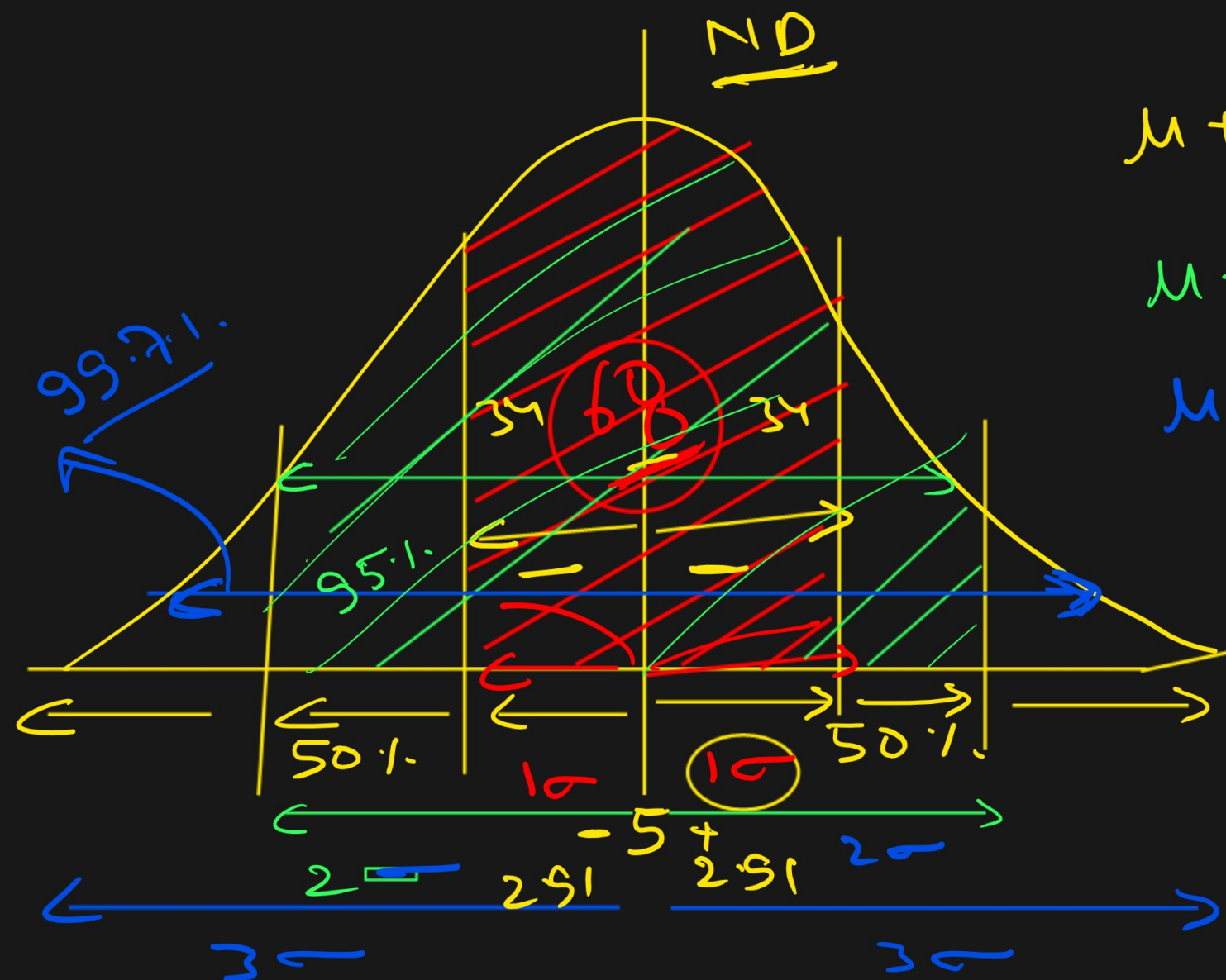
$\sigma = 1$  ✓



$$\text{PDF} = f(x) = \frac{1}{\sigma \sqrt{2\pi}} e^{-\frac{(x - \mu)^2}{2\sigma^2}}$$

↑  
(4)

$$S.D = 2.8$$



$$\mu \pm \sigma = 68\%$$

$$\mu \pm 2\sigma = 95\%$$

$$\mu \pm 3\sigma = 99.7\%$$

$$Z = \frac{X - \mu}{\sigma}$$

$ND \rightarrow SND$