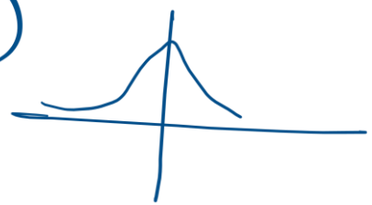
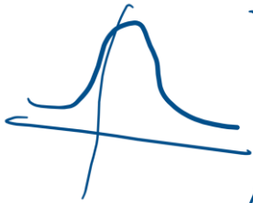
Today

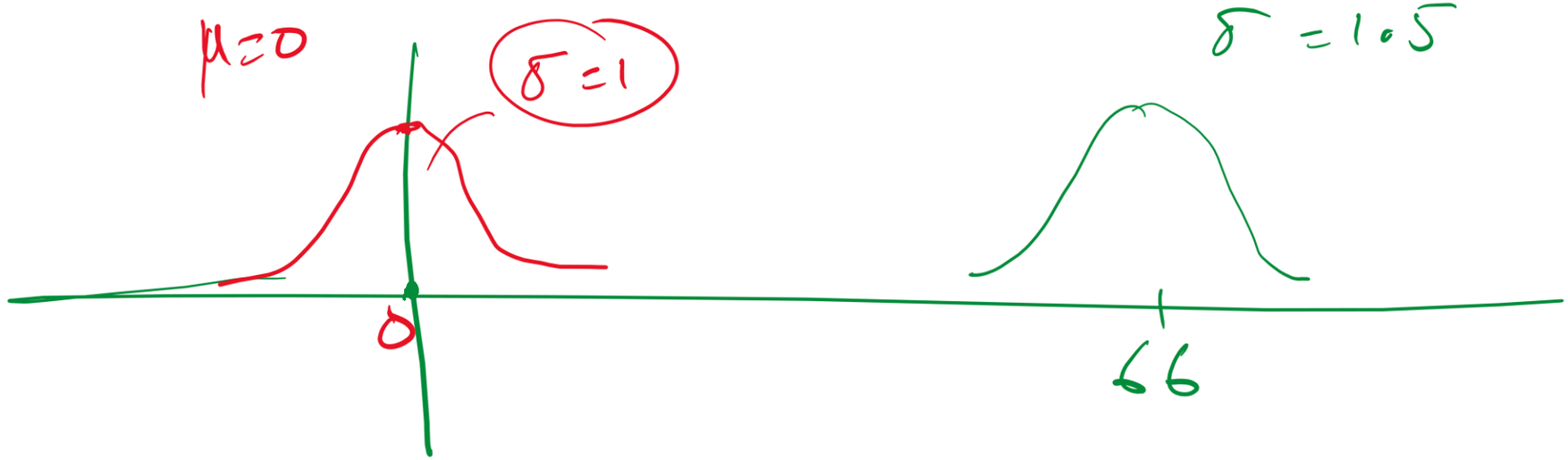
①  + Python

② How to read Table of 

③ Joint

New Topic

$$P(64 < W < 67) = \int_{64}^{67} \frac{1}{\sqrt{2\pi}\,(1.5)} e^{-\frac{(x-66)^2}{2(1.5)^2}}\, dx$$



$$\int_{-\infty}^{-1} f(x)\,dx =$$

$-\infty$

∞

$\int_{-1}^{2}$

Table for (2)

Table for (1)

= Red − Blue

A factory produces metal rods, and the lengths of the rods follow a normal distribution with a mean of 100 cm and a standard deviation of 2.5 cm. The rods are classified as follows:

- Acceptable: Length between 97 cm and 103 cm.
- Short: Length less than 97 cm.
- Long: Length greater than 103 cm.

a) What is the probability that a rod is acceptable?

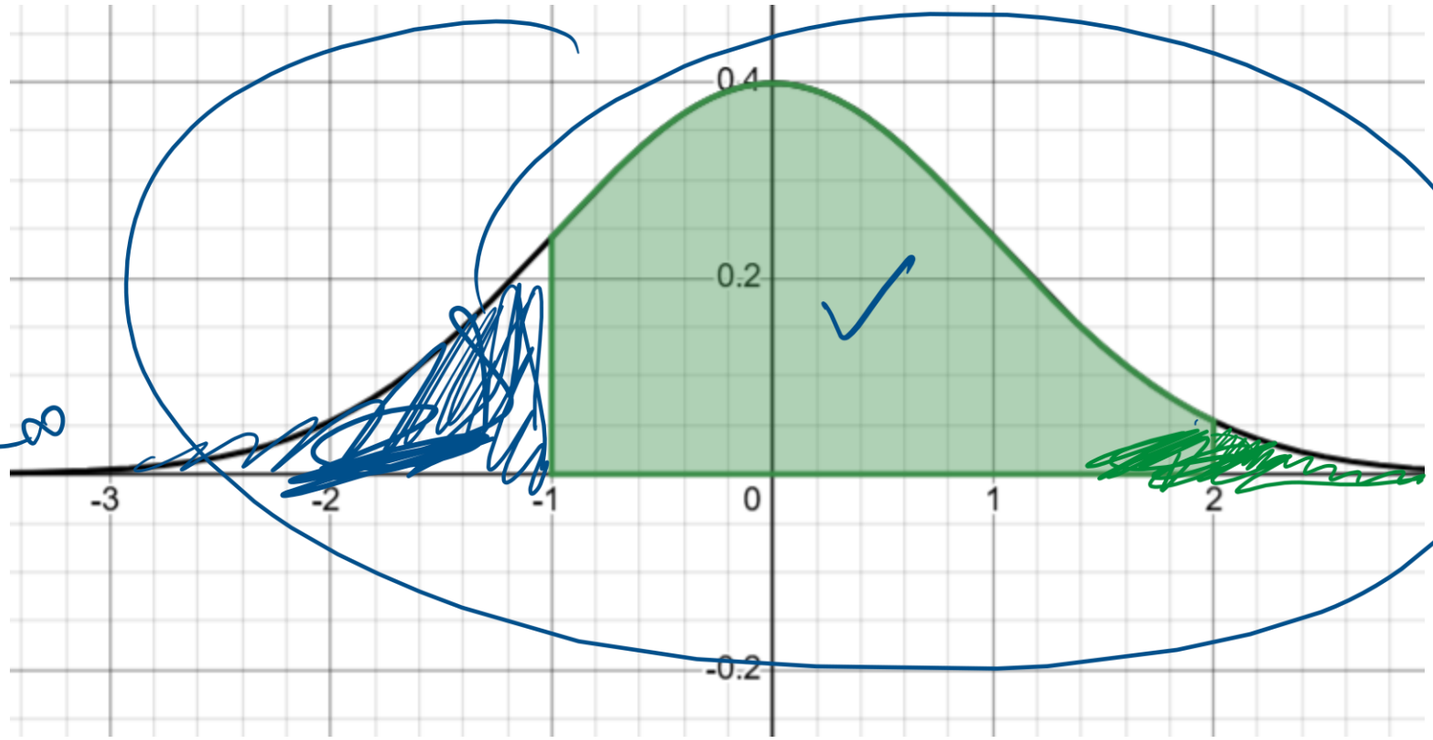
b) If a batch contains 1000 rods, how many rods would you expect to be short, long, and acceptable?

0.7698

$\frac{97-100}{2.5} = -1.2$

$\frac{103-100}{2.5} = 1.2$

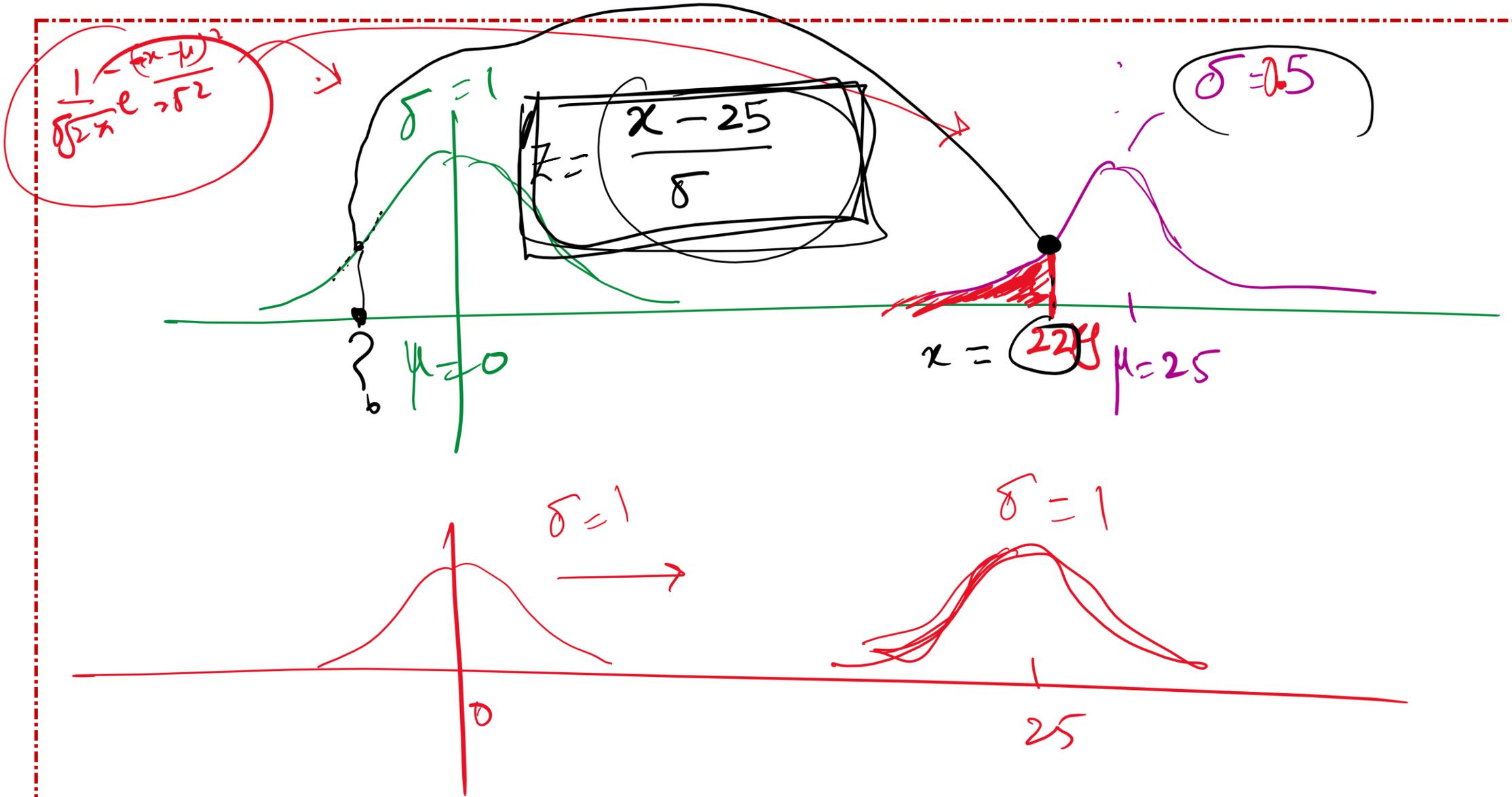
.8849 − .1151 = 0.7698

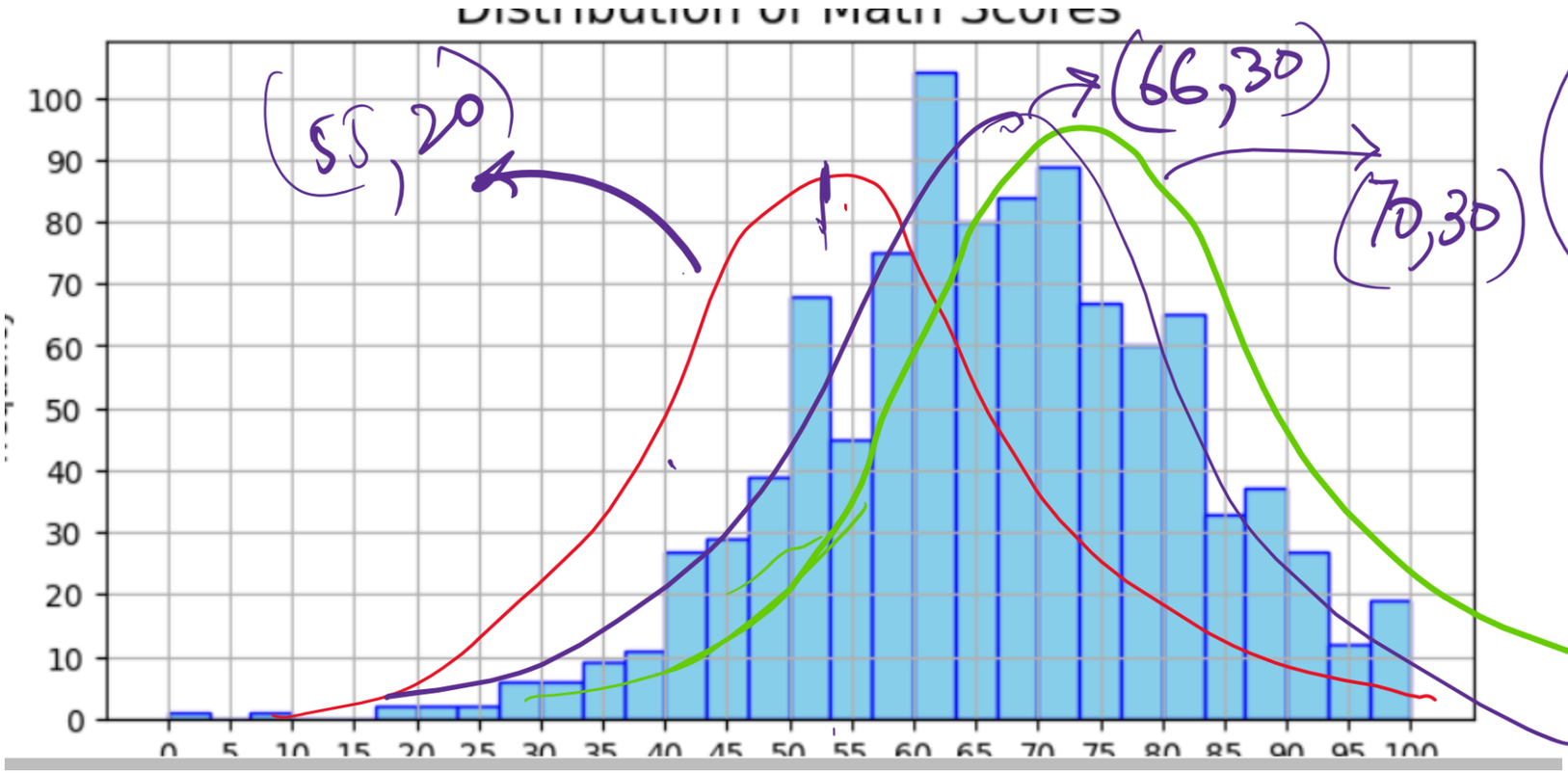


Total — (-1)

$\Sigma = 1$ $\int_{-\infty}^{\infty} = 1$

1 — Blue = Green


$\frac{1}{\sigma\sqrt{2\pi}} e^{-\frac{(x-\mu)^2}{2\sigma^2}}$
$\sigma = 1$
$z = \frac{x-25}{\sigma}$
$\sigma = 0.5$
$\mu = 0$
$x = 22.5$
$\mu = 25$
$\sigma = 1$
$\sigma = 1$
0
25



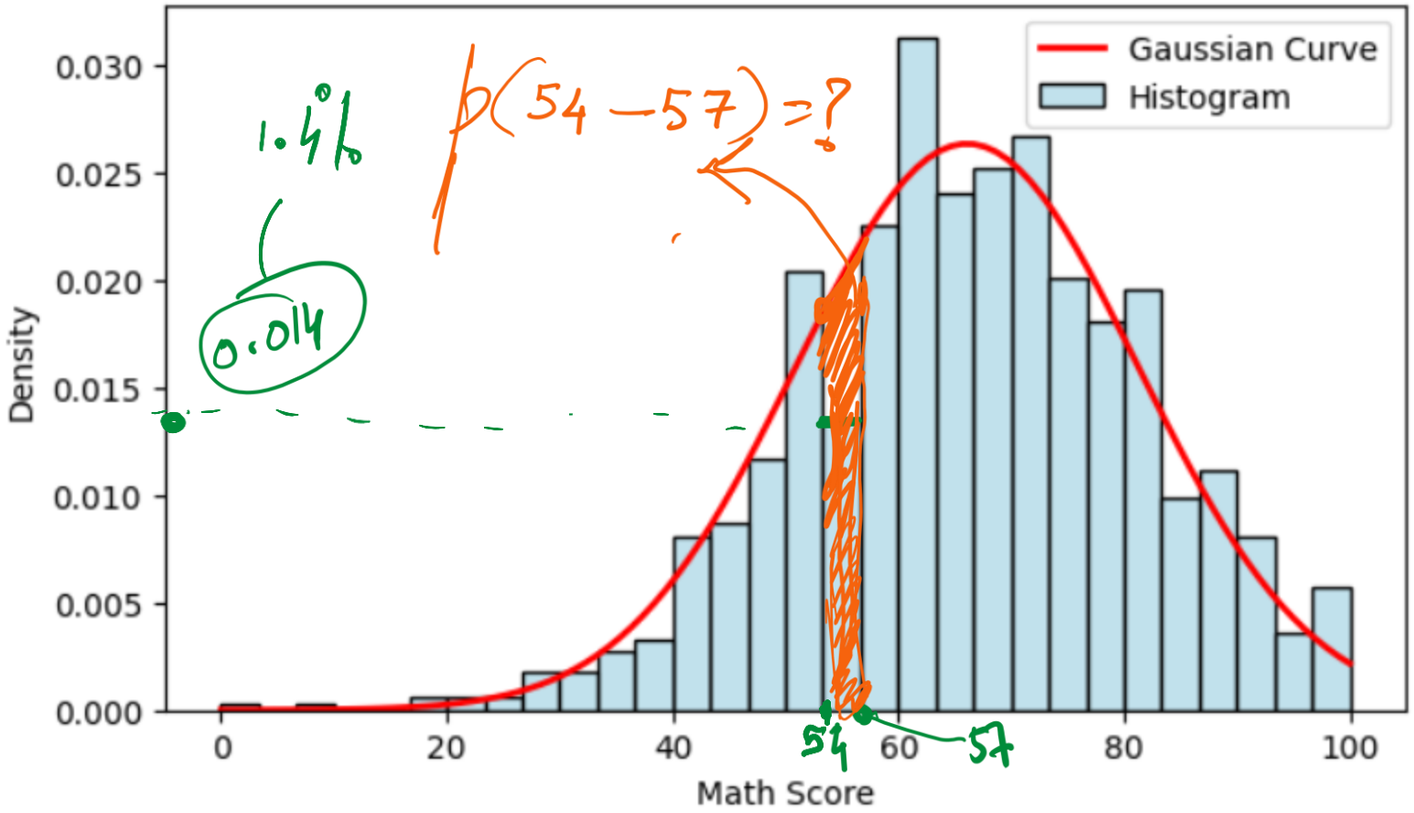
$$\frac{1}{\sigma\sqrt{2\pi}} e^{-\frac{(x-\mu)^2}{2\sigma^2}}$$

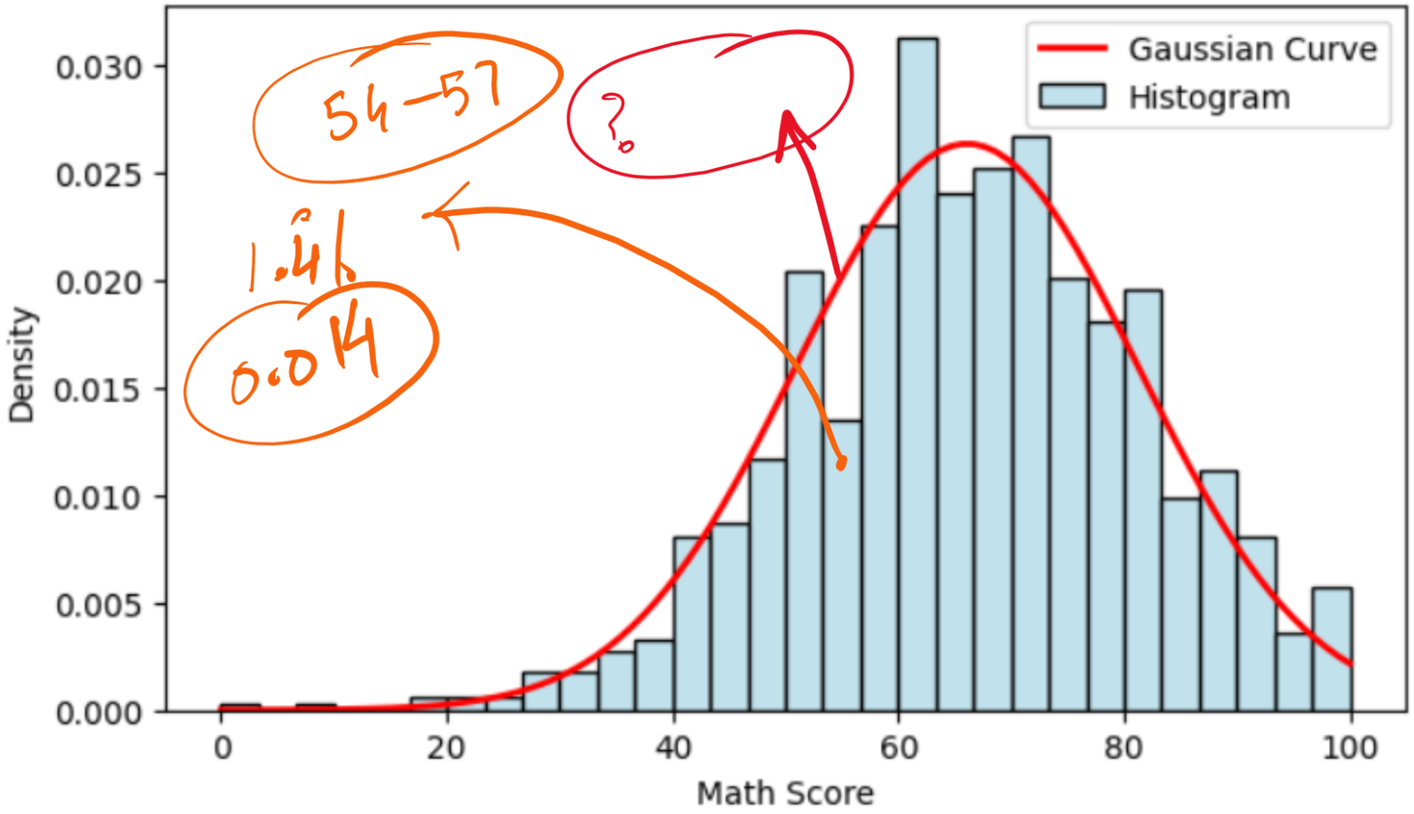
μ, σ

$\mu \rightarrow$ 66

$\sigma \rightarrow$ 30

$\rightarrow$ (Methods)


Gaussian Curve
Histogram
Density
Math Score
0.030
0.025
0.020
0.015
0.010
0.005
0.000
0
20
40
60
80
100
54
57
1.4%
0.014
P(54 – 57) = ?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