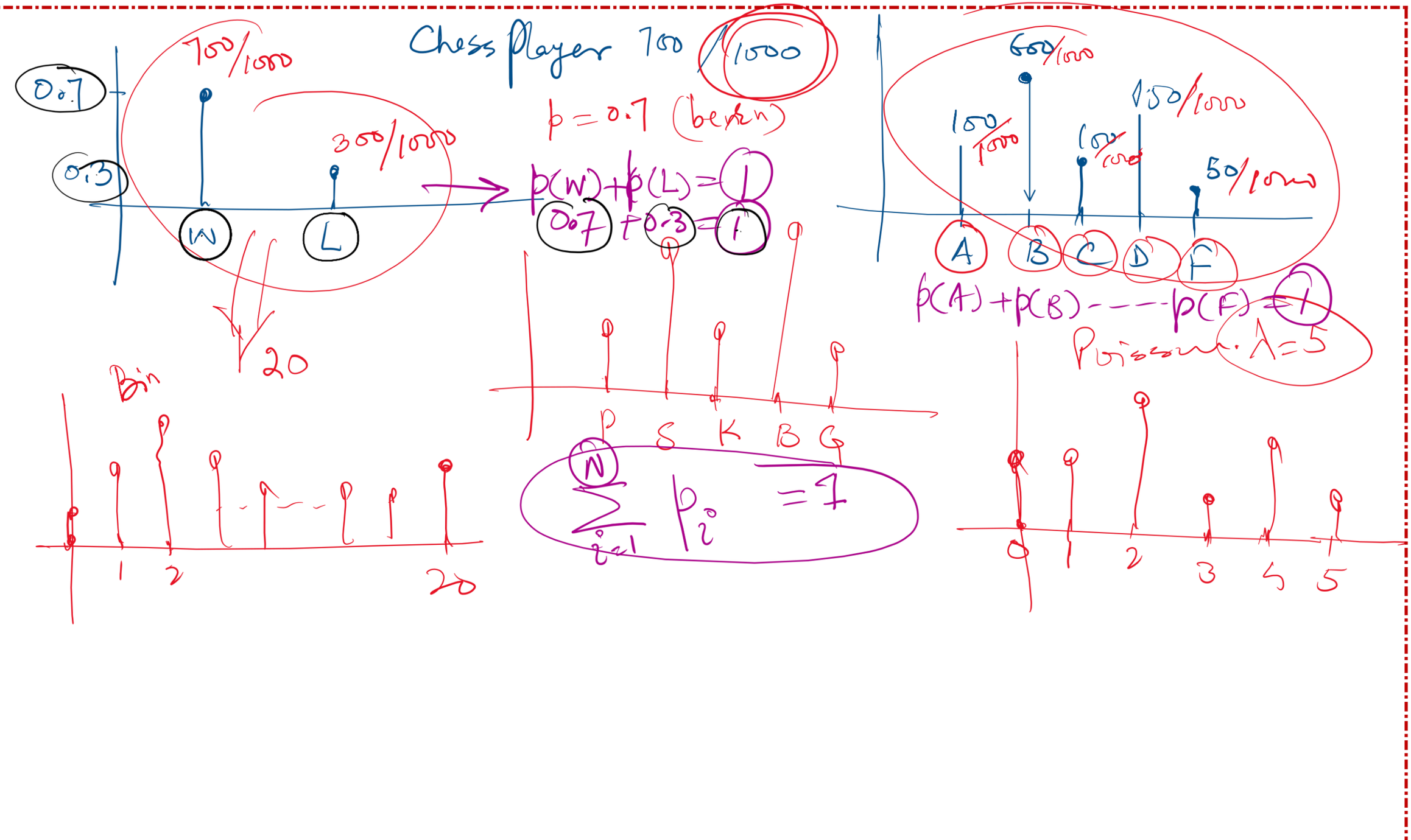
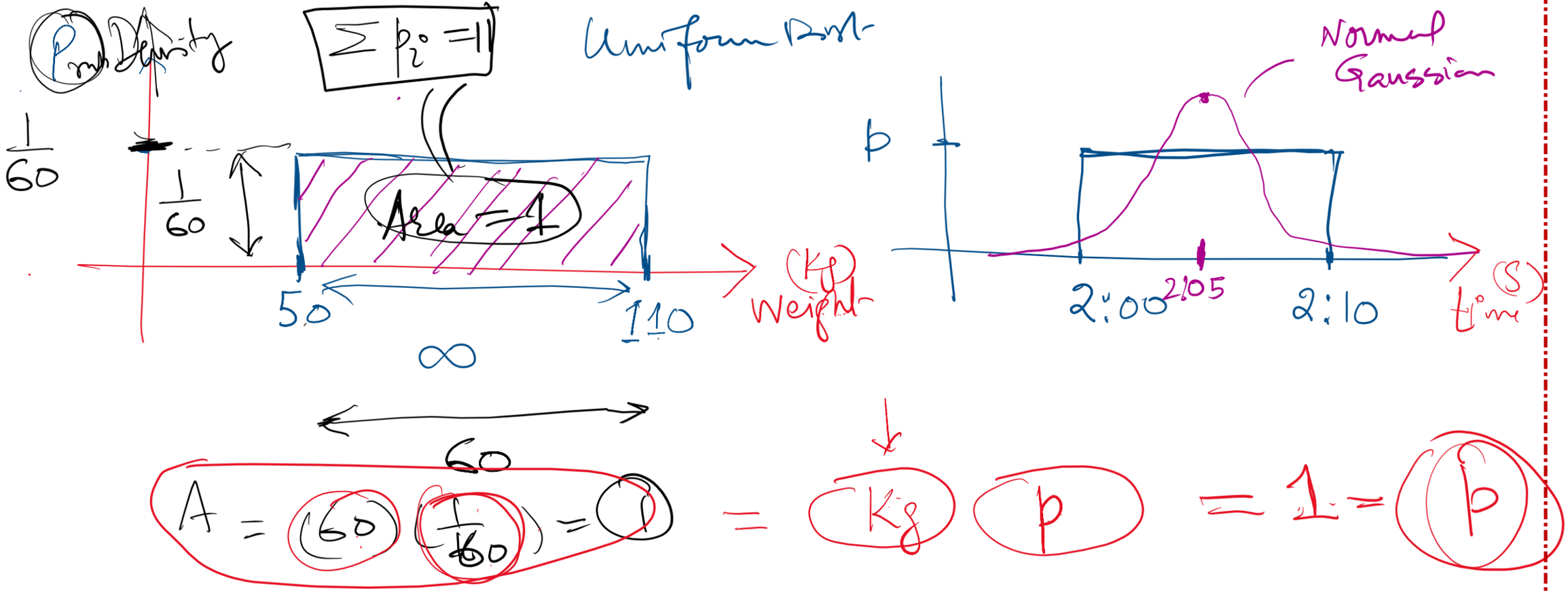

Chess Player 700/1000
0.7
0.3
700/1000
300/1000
W
L
20
Bin
1
2
20
p = 0.7 (berin)
P(W) + P(L) = 1
0.7 + 0.3 = 1
P
S
K
B
G
N
$\sum_{i=1}^{N} p_i = 1$
600/1000
150/1000
100/1000
100/1000
50/1000
A
B
C
D
F
P(A) + P(B) ---- P(F) = 1
Poisson. λ = 5
0
1
2
3
4
5


Prob Density
$\sum p_i = 1$
Uniform Dist-
Normal
Gaussian
1/60
1/60
Area = 1
50
110
(Kg)
Weight-
p
2:00
2:05
2:10
time
(S)
∞
60
A = (60) (1/60) = 1
=
Kg
p
= 1 =
p

$$S = vt$$

$$\text{Dist} = \text{Speed} \times t$$

$$m = \frac{m}{s} \times s = m$$

$$60 \times \frac{1}{60} = 1$$

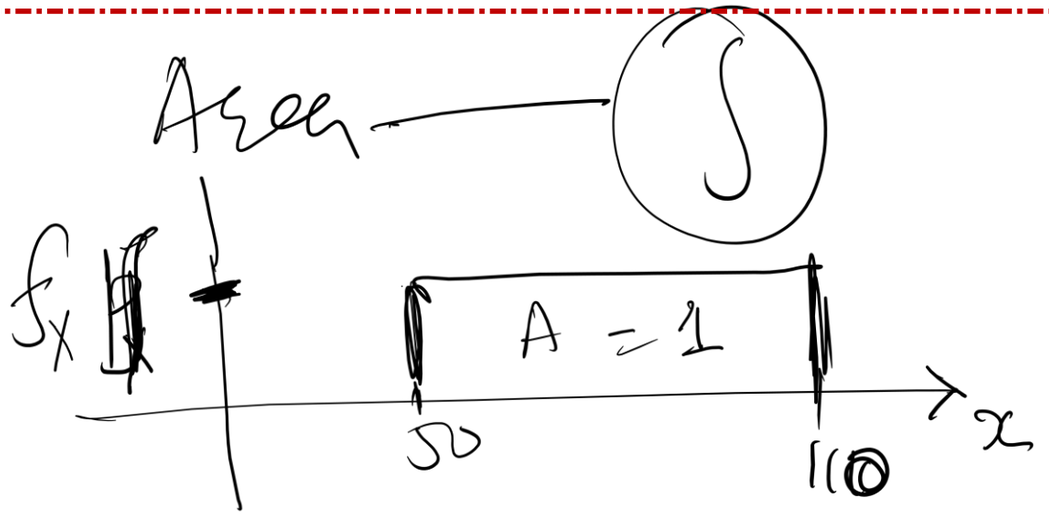
$$\not{60} \times \frac{p}{\not{kg}} = p$$

$(60)\left(\frac{1}{60}\right)$

Prob. Density

Populaln - Density

$1000/km^2$



$$f_X(x) = \frac{1}{60}$$

$$\int_{50}^{110} f_X(x)\,dx = 1$$

P/x

x

P

pdf

Prob. Density Function

Uniform

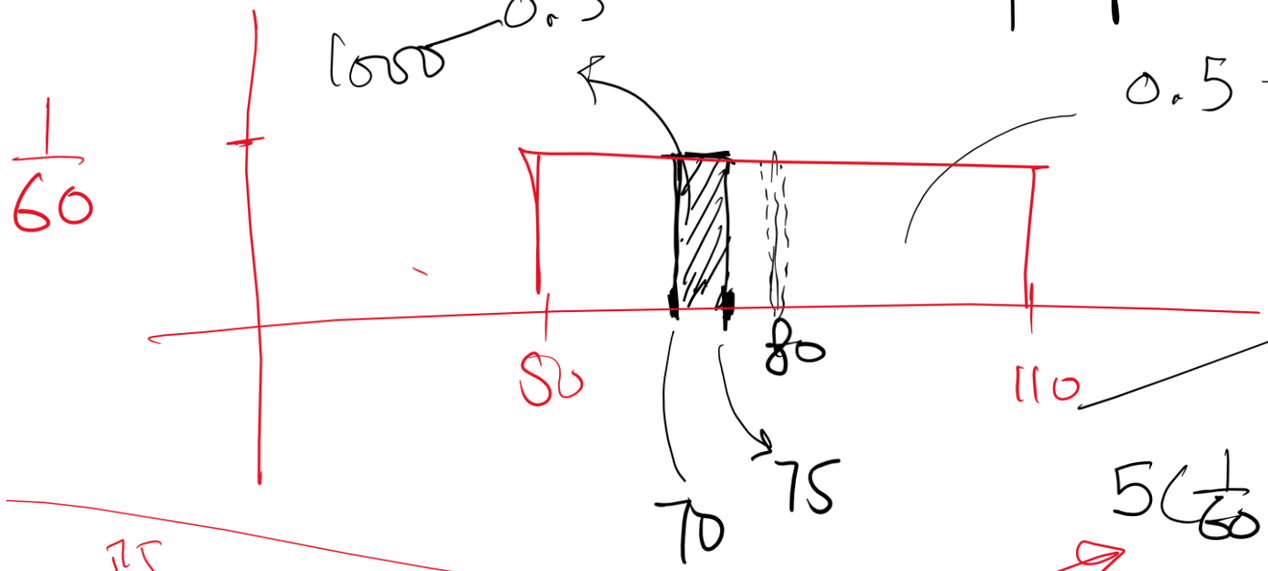
Normal

2000 people

1000 → 0.5

0.5 → 1000

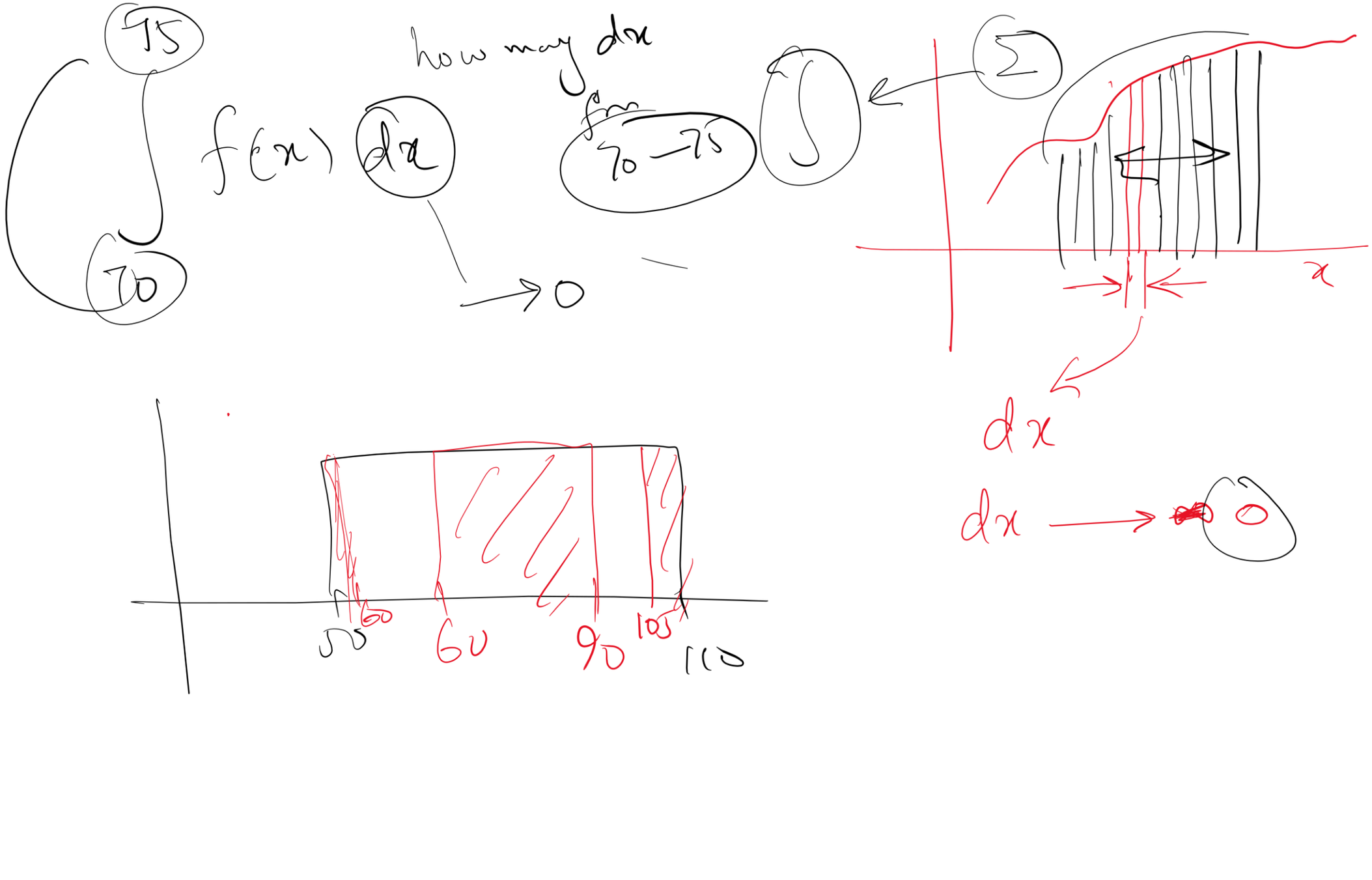
Find the probability of people having wt 70 – 75 kg.

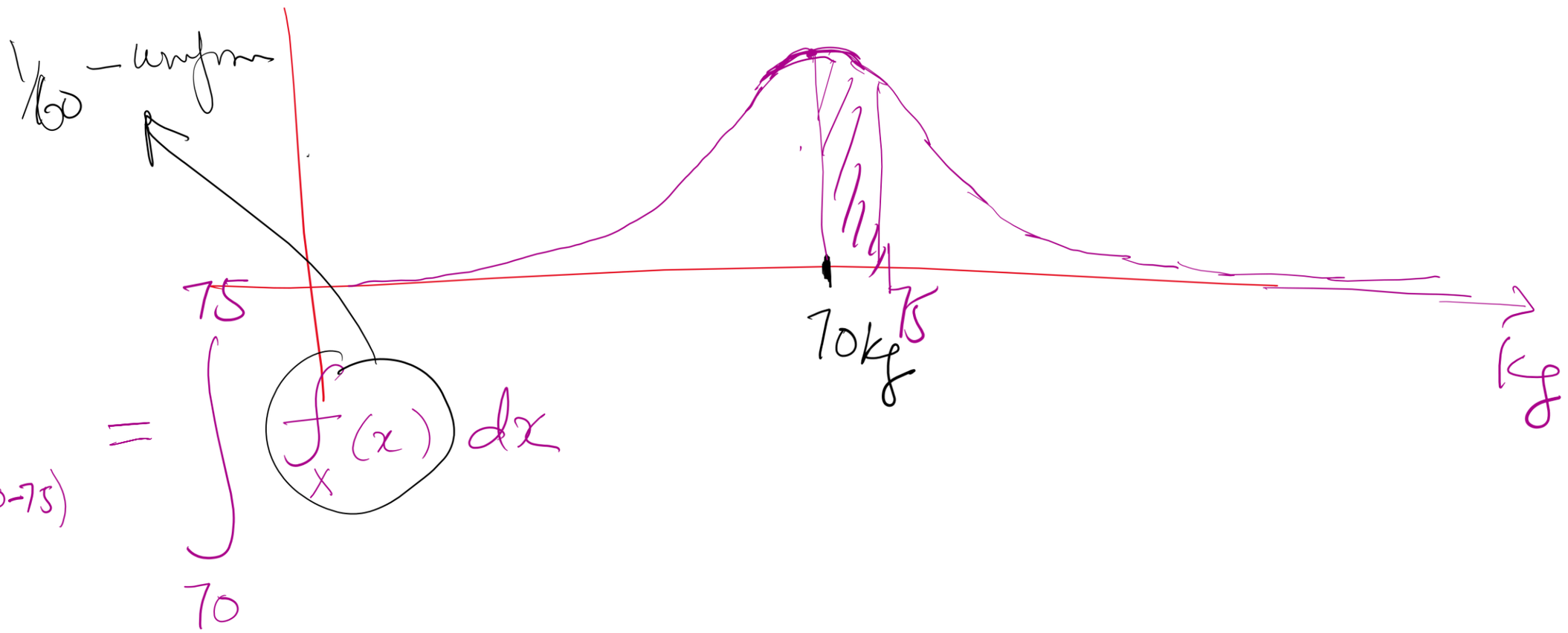


$5\left(\frac{1}{60}\right) = 5/60 = 1/12 = 0.08$

$\frac{1}{60} x\Big|_{70}^{75} = \frac{1}{60}(75-70) = 5/60$

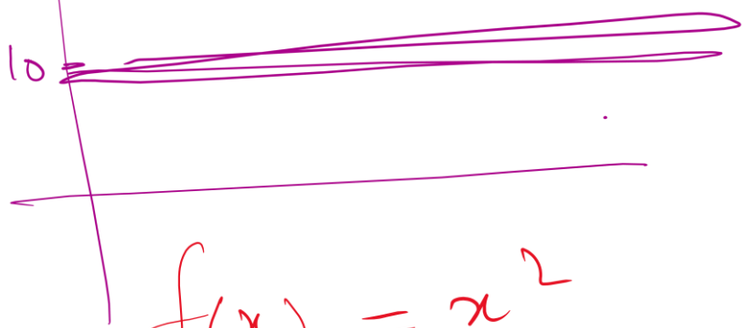
$= \int_{70}^{75} f_x(x)\,dx = \int_{70}^{75} \frac{1}{60}\,dx$


75
70
how many dx
f(x) dx
70 → 75
∫
Σ
x
dx
dx → 0
50
60
90
105
110

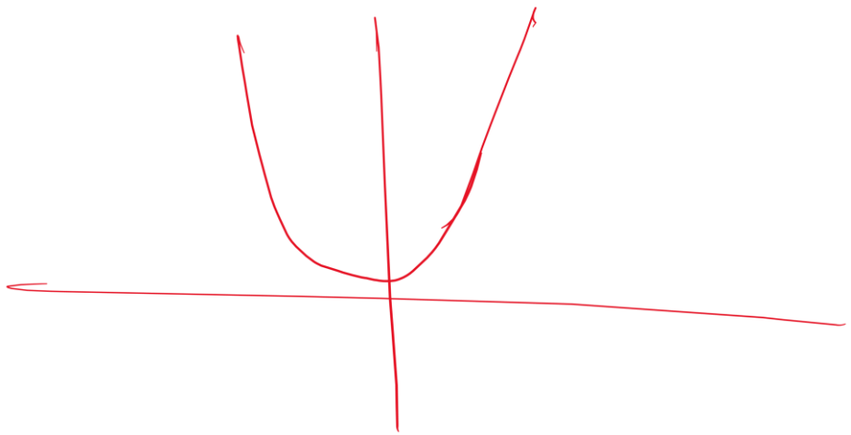


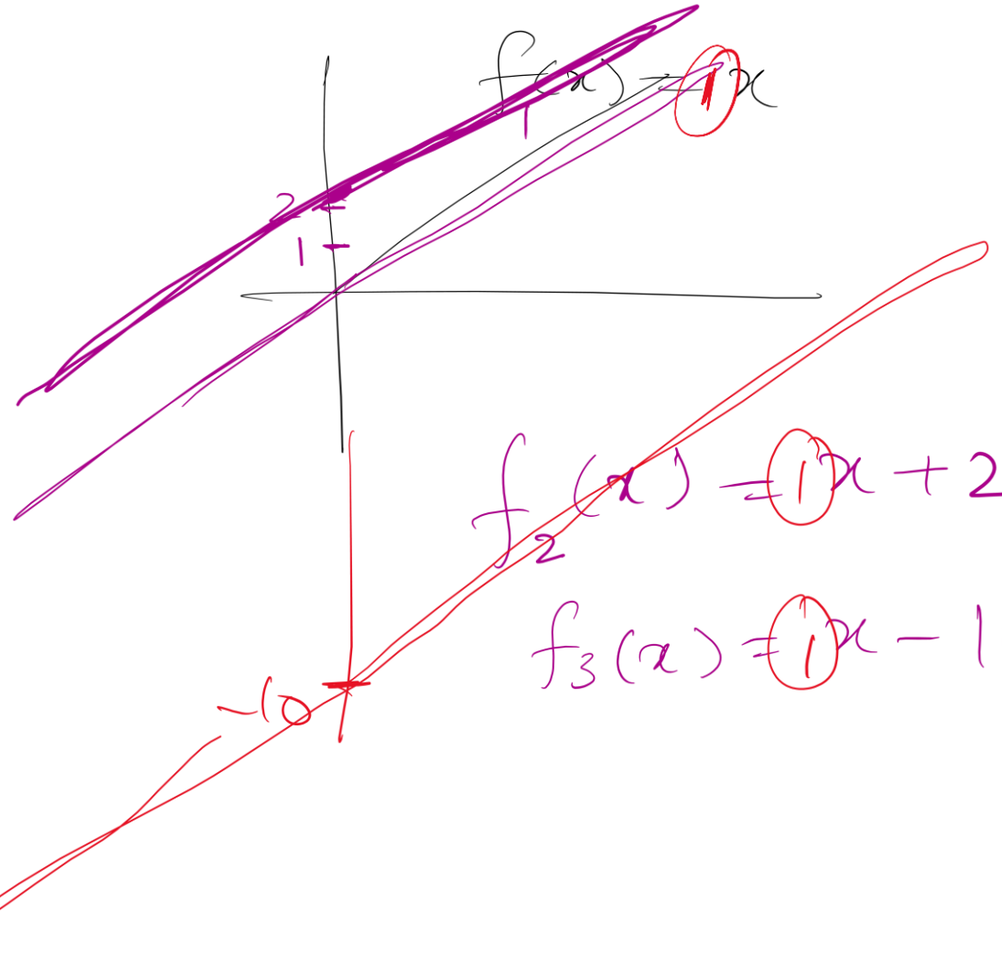
$$p_{(70-75)} = \int_{70}^{75} f_X(x)\,dx$$

$f(x) = 10$



$f(x) = x^2$

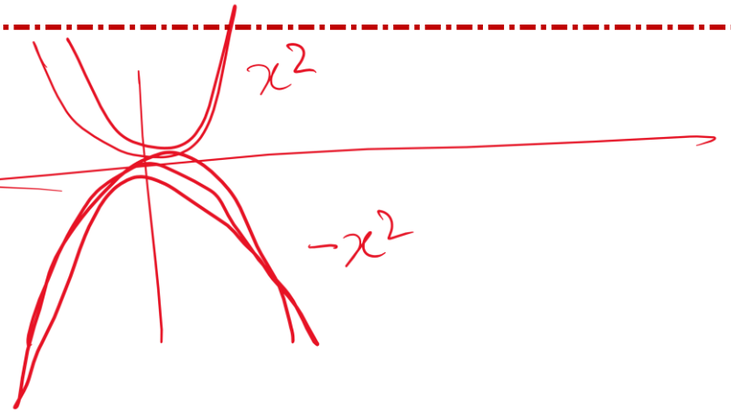




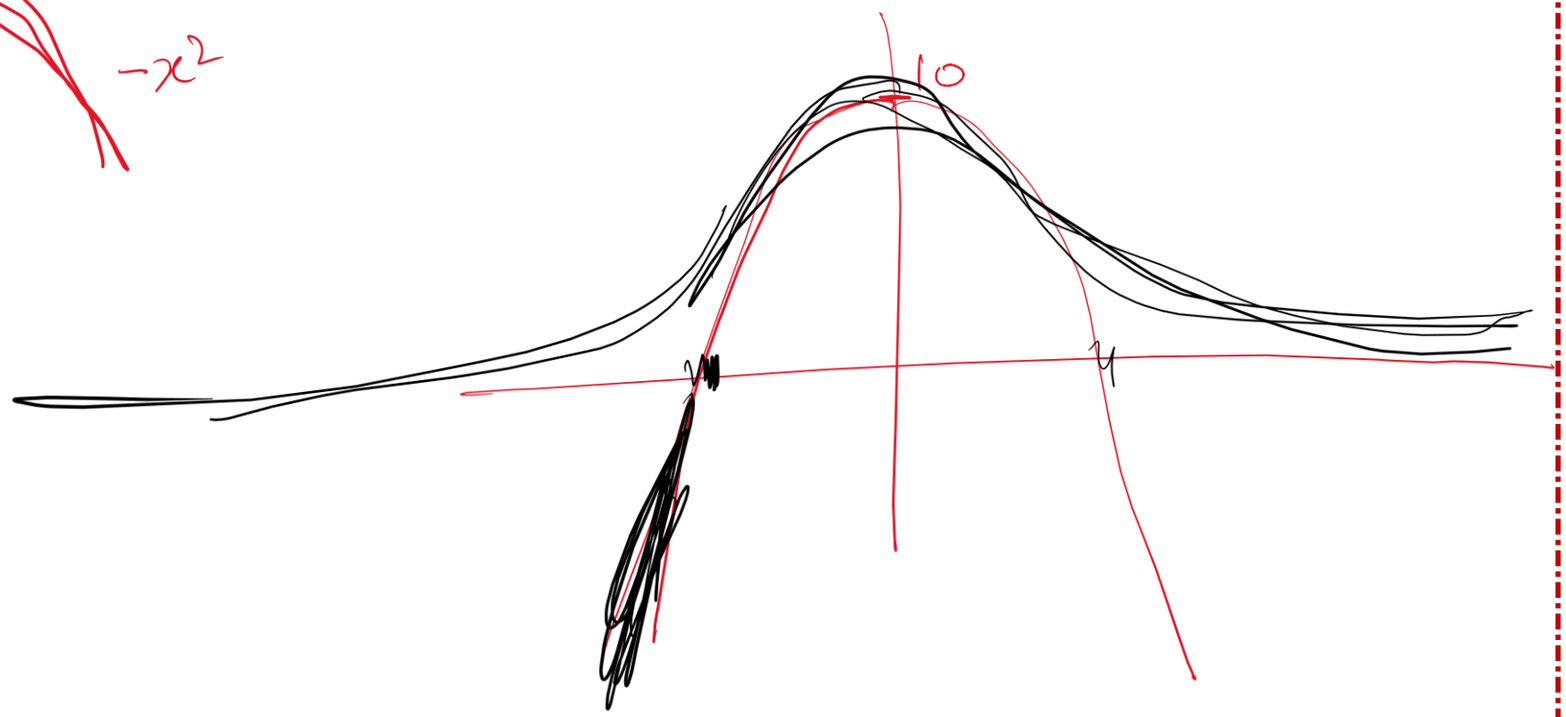
$f_2(x) = 1x + 2$

$f_3(x) = 1x - 10$

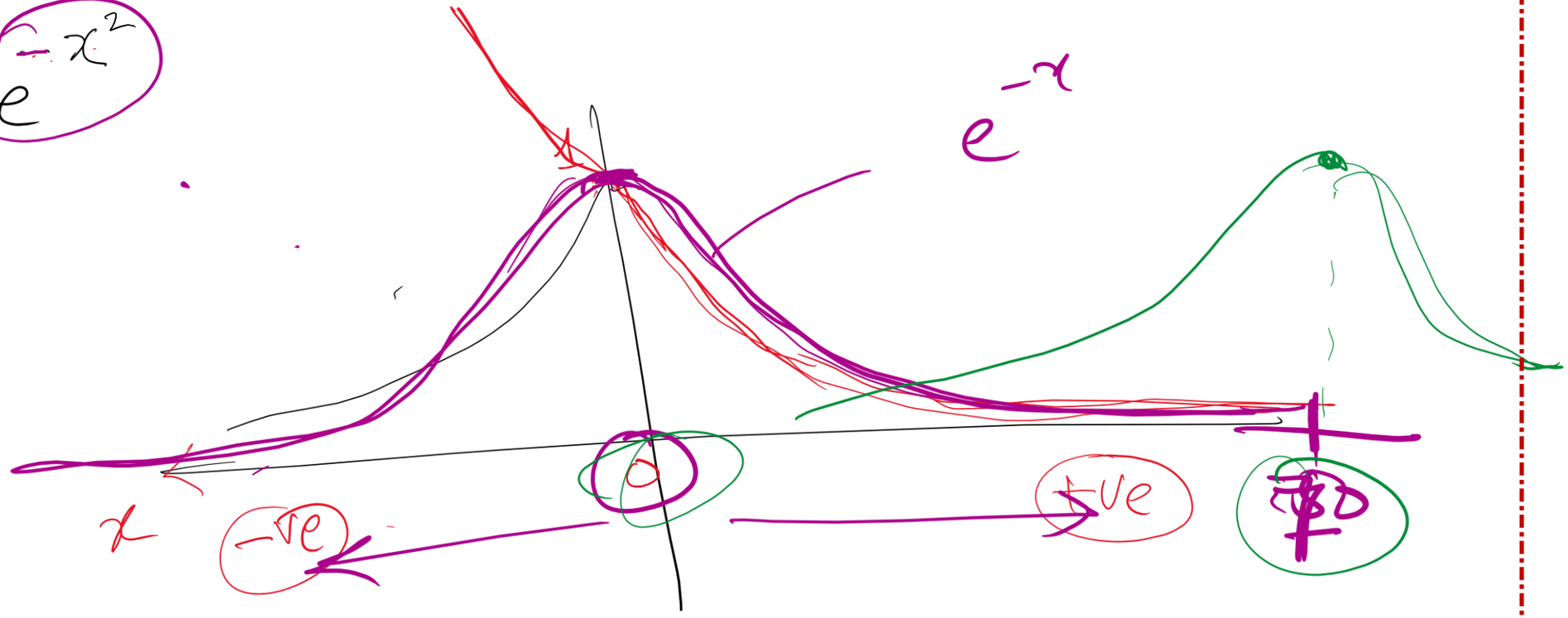
$f(x) = -x^2$

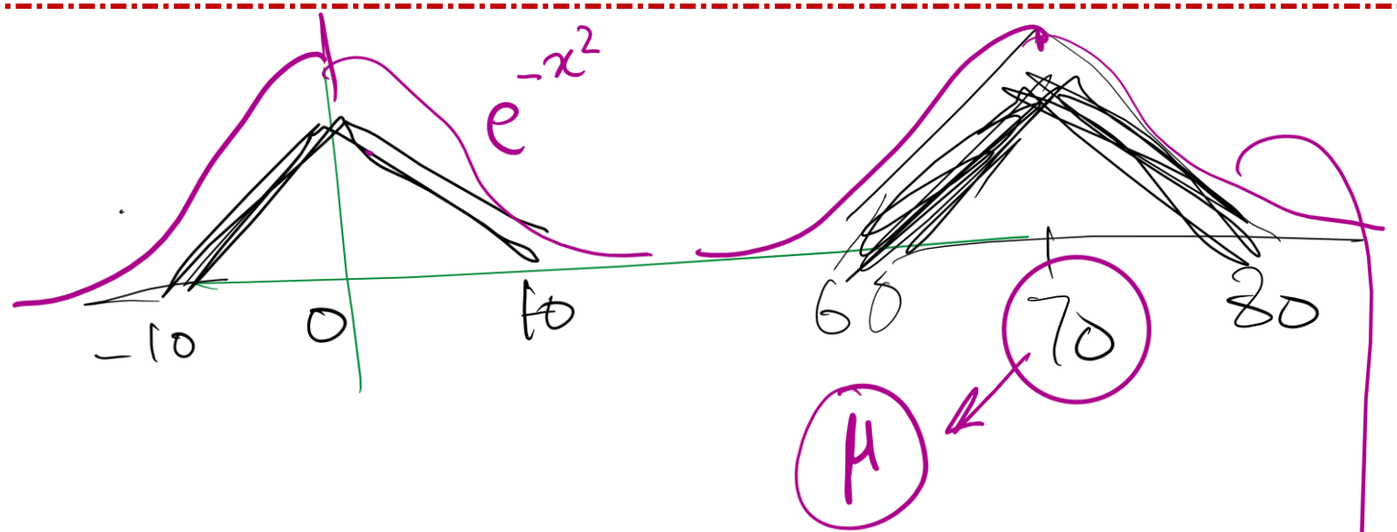


$f(x) = -x^2 + 10$



$f(x) = e^{-x^2}$

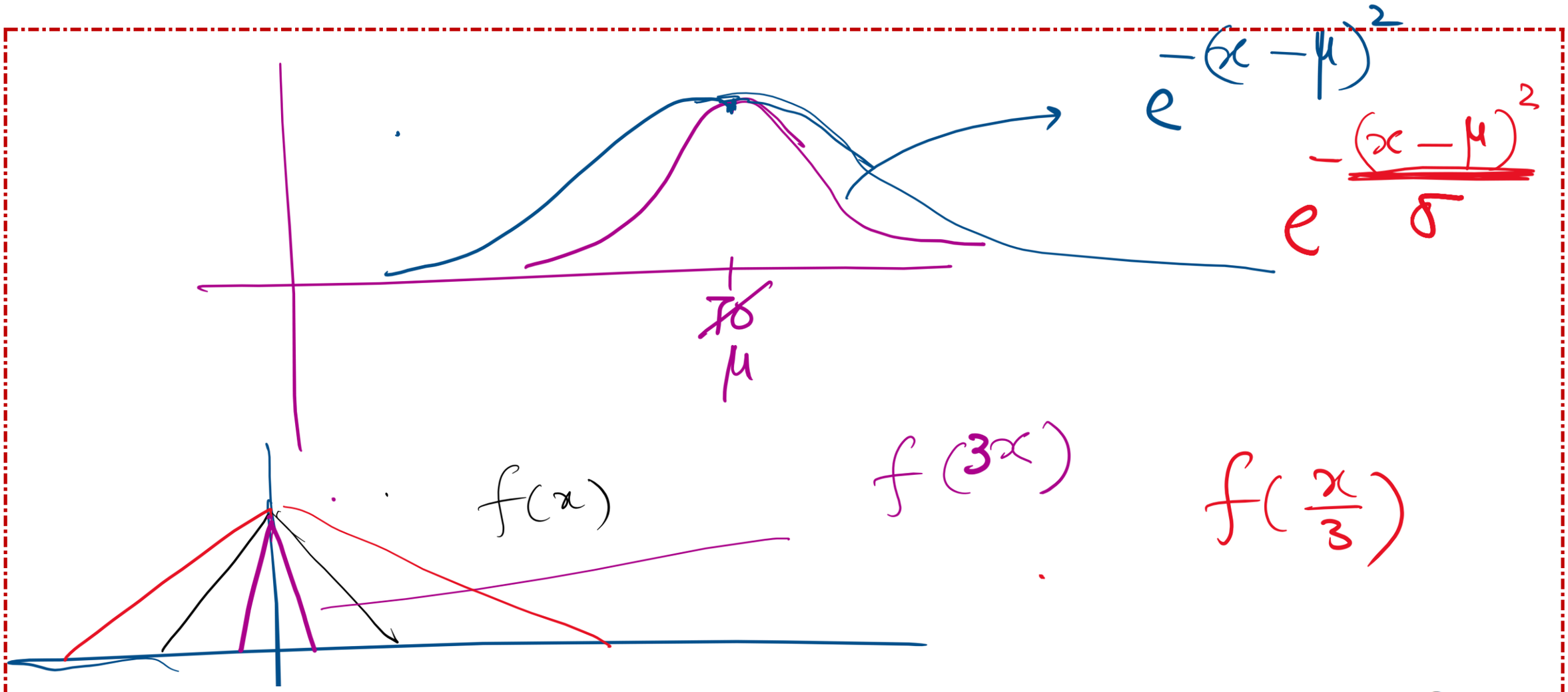




$f(x)$

$f(x-70)$

$e^{-(x-\mu)^2}$



The Probability Density Function (PDF) for a Normal $X \sim N(\mu, \sigma^2)$ is:

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