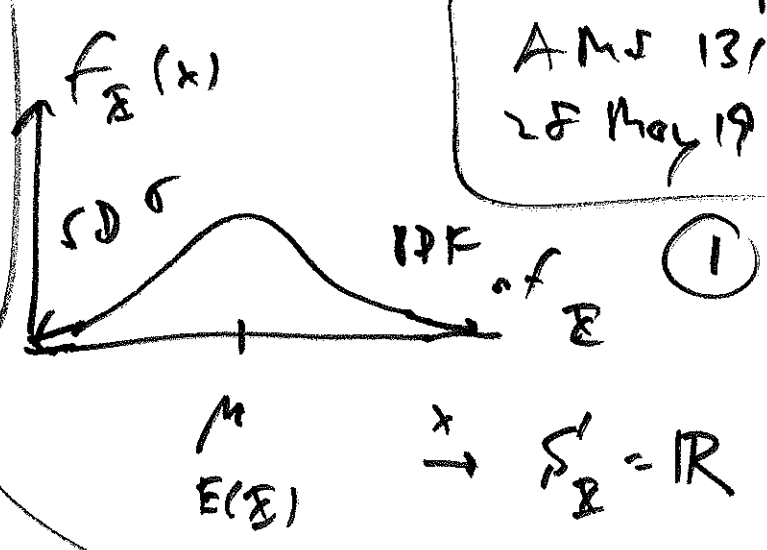
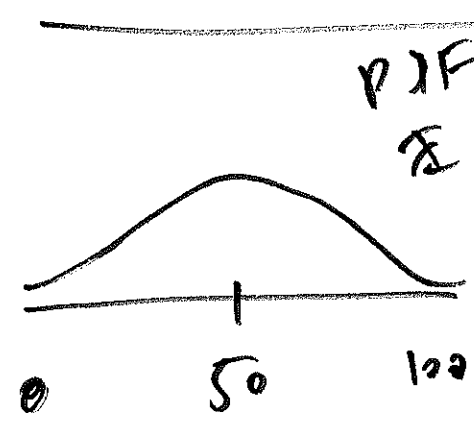


this is important
 time: distributions
 next time:
 time:

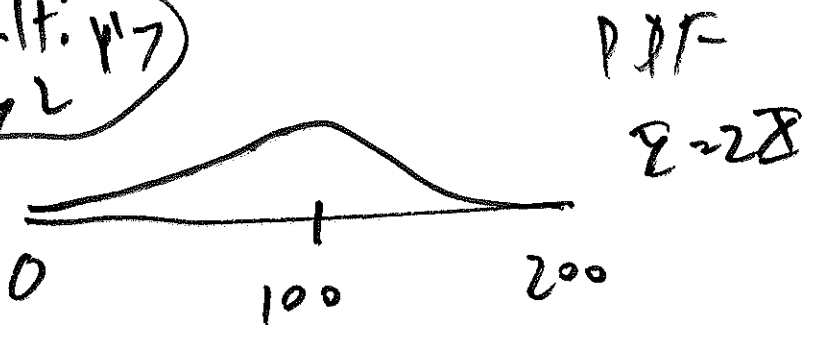
de Moivre
(1710)



$$f_X(x) = \frac{1}{\sigma\sqrt{2\pi}} \exp\left[-\frac{1}{2}\left(\frac{x-\mu}{\sigma}\right)^2\right]$$



multiplied
by 2



$\mu \in \mathbb{R}$

①

$\sigma \geq 0$

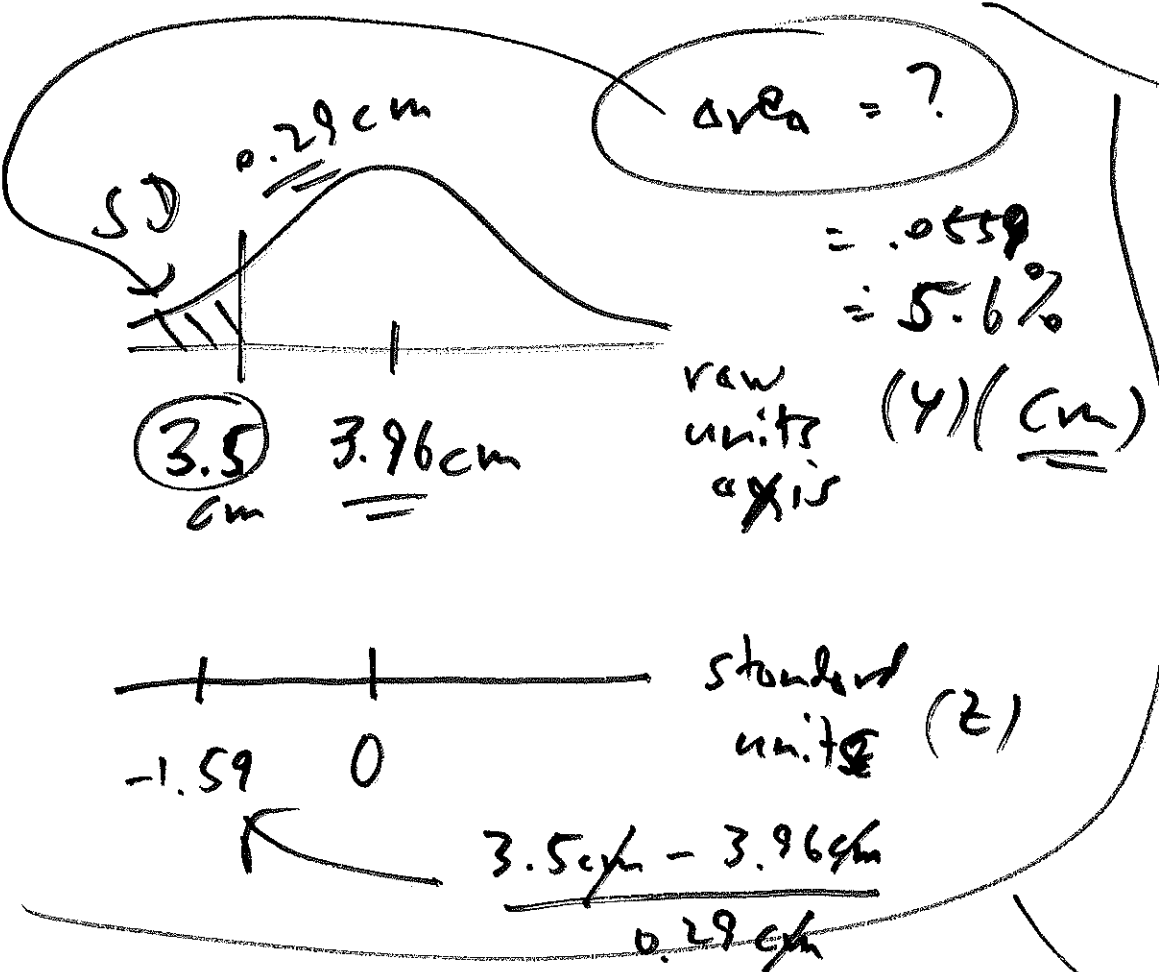
①

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

$$= \int_{-\infty}^{\infty} \frac{1}{\sqrt{2\pi}} e^{-\frac{x^2}{2}} dx$$

$$e^{-\frac{x^2}{2}} dx = \sqrt{2\pi}$$

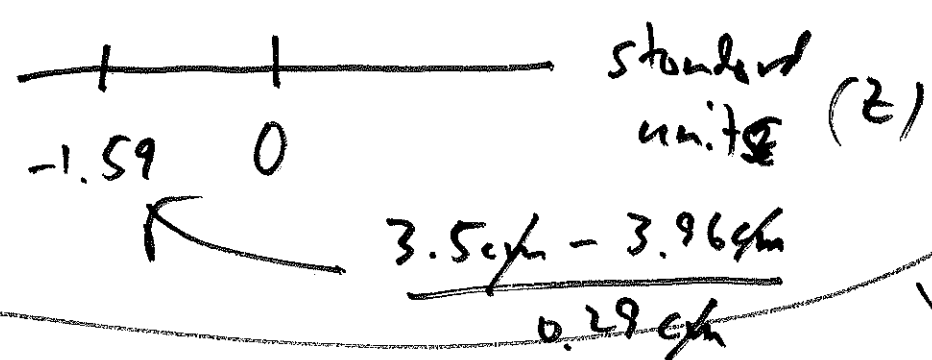
$$e^{-\frac{x^2+y^2}{2}} dx dy = 2\pi$$



converting to standard units (54)

data:

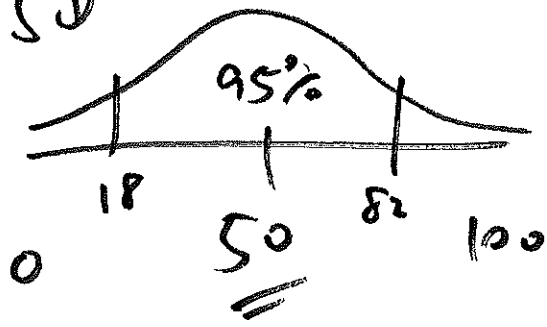
$$z = \frac{7 - \bar{y}}{s}$$



v.v.
$$z = \frac{2 - \mu}{\sigma}$$

$$V(\bar{X}_1 + \bar{X}_2) = V(\bar{X}_1) + V(\bar{X}_2) + 2C(\bar{X}_1, \bar{X}_2)$$

$SD = 16$



SD ~~is~~ too small

~~40~~ too big

(3)