

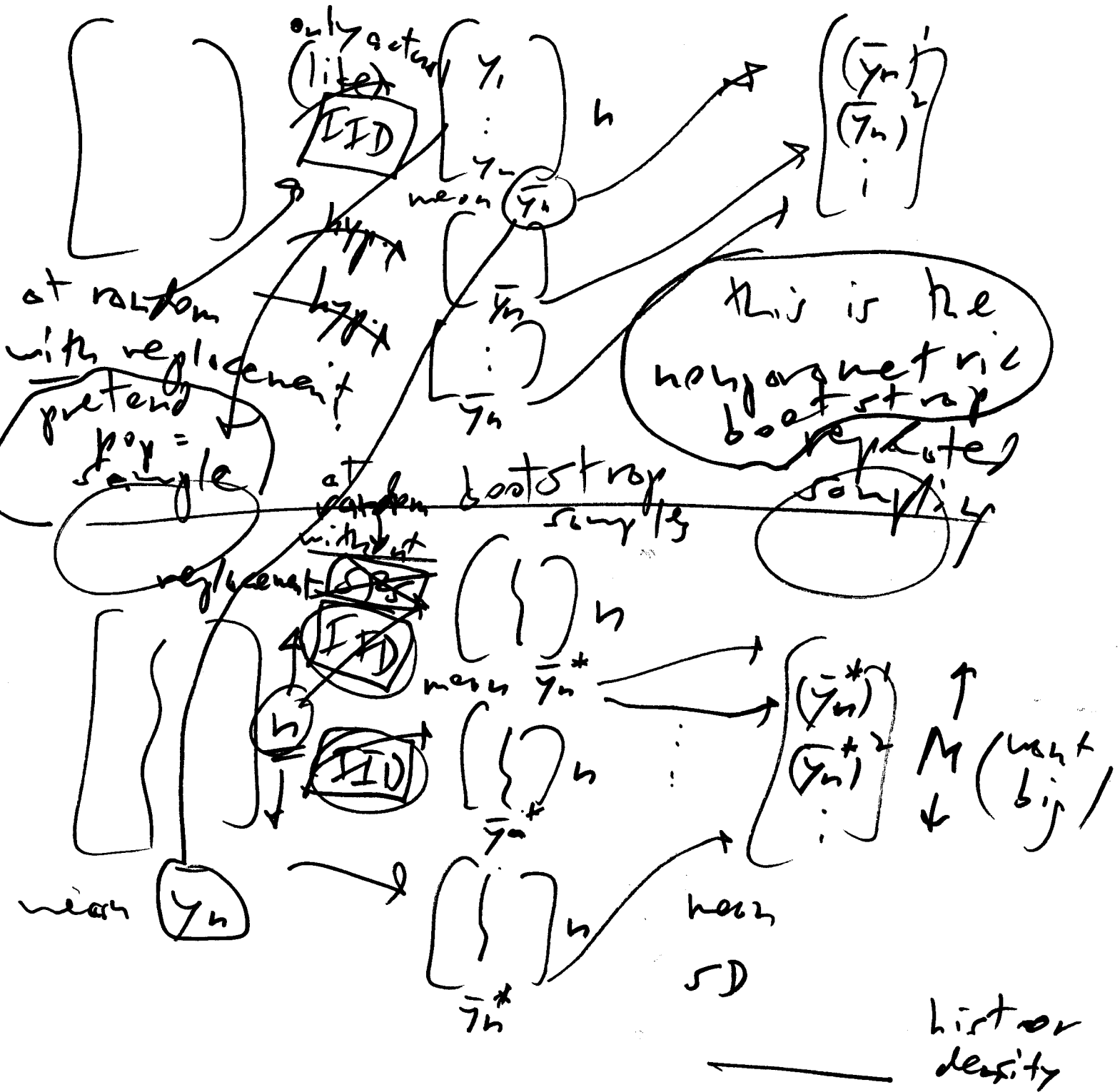
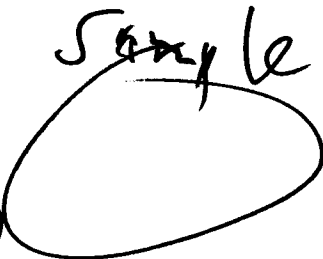
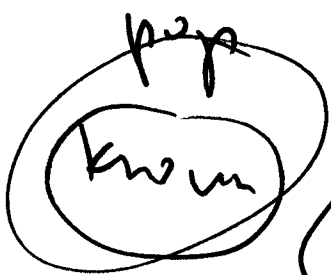
bootstrap (Efron, 1979, ...)

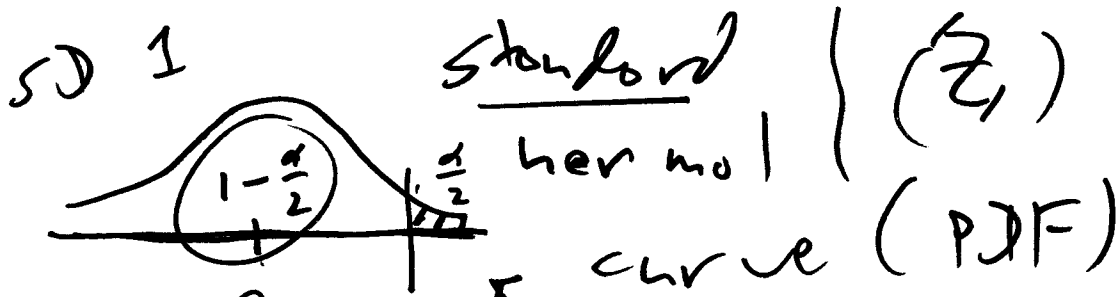
STAT 206

27 Jan 21

DD disc. section

①

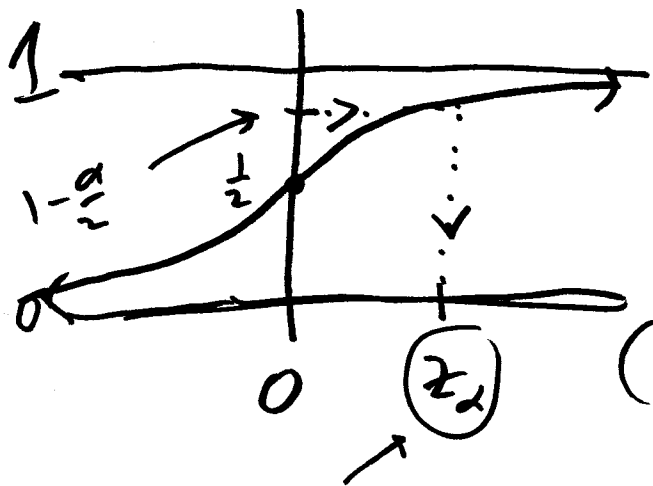




$\Phi^{-1}(1 - \frac{\alpha}{2}) = z_{\alpha/2}$

inverse CDF value (z quantile)

standard units scale (z)



$F_Z(z) = \Phi(z)$

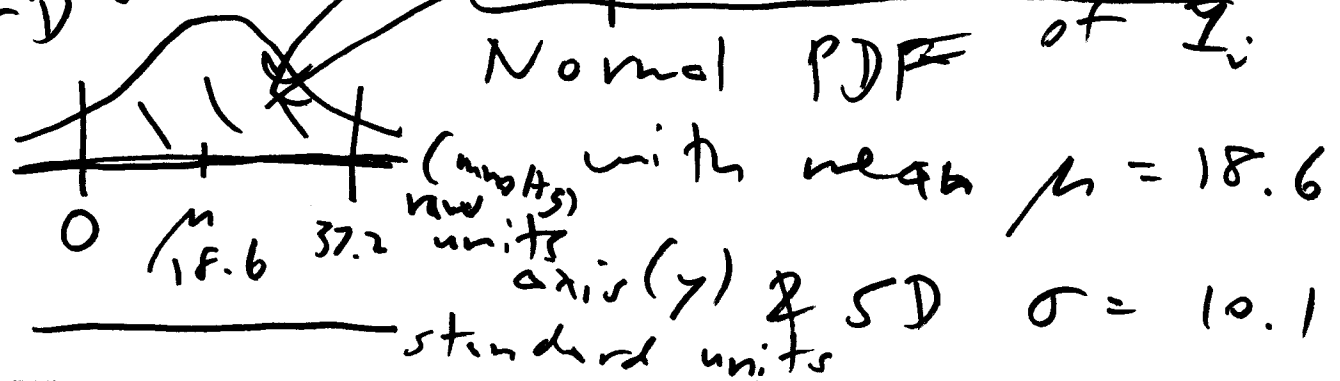
z quantile (inverse CDF)

norm(37.2, 18.6, 10.1) value

SD $\sigma = 10.1$

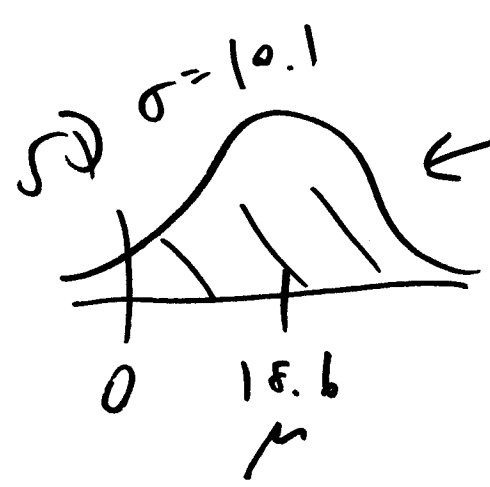
1 - norm(0, 18.6, 10.1)

Normal PDF of Z_i



d (normal)	
p	↓
z	
v	
prefix	suffix

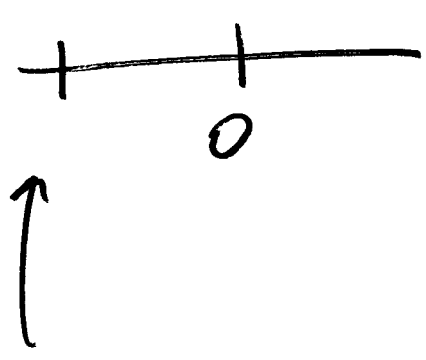
- d : PDF ~~PMF~~
- p CDF
- z quantiles (inverse CDF)
- v random samples



$1 - \text{pnorm}(-1.84) = 0.97$

raw units (in Hz) (y)
 axis

actual
 $y > 0$ %
 ≈ 100 %



standard units ($z = \frac{y - \mu}{\sigma}$)

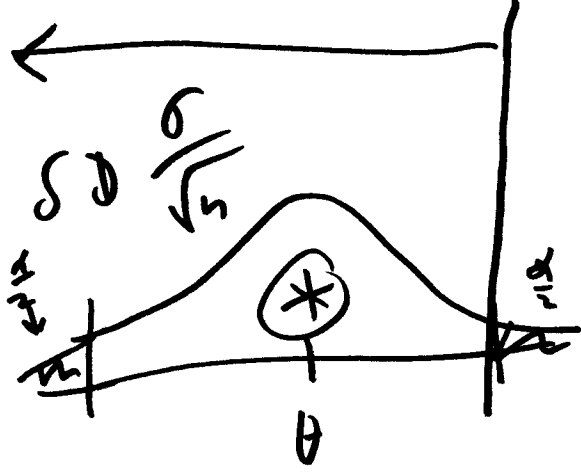
converting to su

$\frac{0 - 18.6}{10.1} = -1.84$

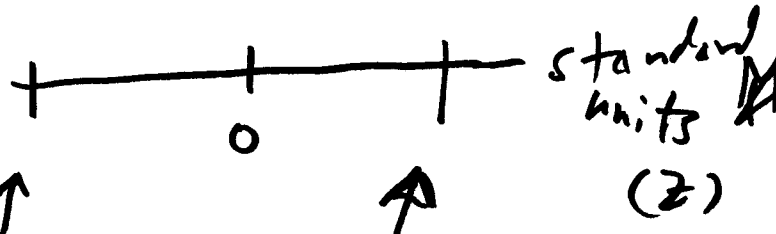
PDF of $\bar{z} = \theta^*$

Quiz 3

Jo to p(4) to y



PDF of $\bar{I}_n = \hat{\theta}$ under \mathcal{M} incorrect model



$$(\bar{I}_n | \theta \in \mathcal{B} \mathcal{M}) \stackrel{\text{IID}}{\sim} N(\theta, \sigma^2)$$

$$\bar{I}^{-1}\left(\frac{\alpha}{2}\right)$$

$$\bar{I}^{-1}\left(1 - \frac{\alpha}{2}\right)$$

$$z = -\bar{I}^{-1}\left(\frac{\alpha}{2}\right)$$

$$(\bar{I}_n | \theta \in \mathcal{B} \mathcal{M}) \sim N\left(\theta, \frac{\sigma^2}{n}\right)$$

$$= -\bar{I}^{-1}\left(1 - \frac{\alpha}{2}\right)$$