Q1

DEEKSHAGURU

(b) H_0 = App $\geq$ Heart rate

H_1 = App $<$ Heart rate

(C) Standard Error

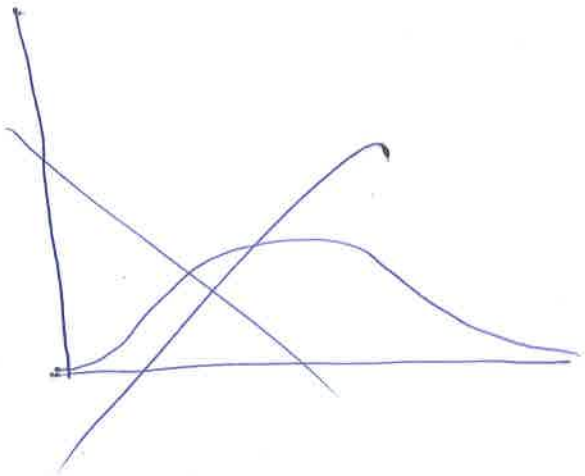
$$\Rightarrow \frac{\sigma}{\sqrt{n}} \Rightarrow \frac{10}{\sqrt{64}} = \frac{10^{5}}{8_4} = \frac{5}{4}$$

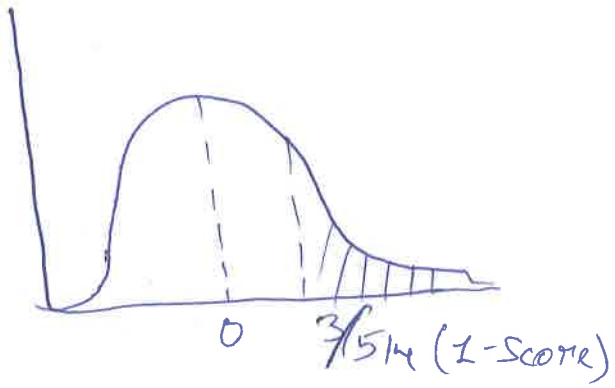
→ Std Error mean the distance between the claim and the Z score

(d) Z-Score => No of Std deviation

$$Z\,score \Rightarrow \frac{x-u}{\sigma/\sqrt{n}} \Rightarrow \frac{72-69}{5/4} = \frac{3}{5/4}$$

e)





Q2 $P(-Spam) = 80\% = 0.8$

Given = $P(Spam) = 20\% = 0.2$

$P(S / Spam^{(F)}) = 0.9$

$P(-S / Spam^{(F)}) = 0.05$

a) Prior probability is the ~~data~~ Probability from the Past data on Past Evidence & Posterior is the posterior change we should update Prior probability

(c) ~~Posterior probability should be~~

$P(Spam\ (Flag) / -S) = P(S / Spam^{(F)}) \times P(-Spam)$

+

$P(-S / Spam^{(T)}) \times P(-Spam)$

$\Rightarrow 0.9 \times 0.2 + 0.05 \times 0.8$

$\Rightarrow 0.18 + 0.0040$

$P((Spam\ (Flag) / -S)) \Rightarrow 0.0058$

(d) The Posterior probability will be Lower the Prior probability