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Sec: B'

Q(1) (a) The Population mean is 72 bpm & Sample mean is 69 bpm

(b) null hypothesis $H_0 = \mu \geq 72$ bpm

Alternative hypothesis $H_1 = \mu < 72$ bpm

(c) Standard error = $72 - 69 = 3$ //

• Standard error means the distance b/w baseline and Samaple mean

Q2

a) $P(S) = 20\% = 0.2$

$P(F) = 0.9$

Probability of Prior is $P(F/S) \times P(S) = 0.9 \times 0.2 = 0.18$ //

c) $P(S/F) = \dfrac{P(F/S) \times P(S)}{P(F/S) \times P(S) + P(F/\sim S) \times P(\sim S)}$

Given)

$P(F/S) = 0.9$

$P(S) = 0.2$

$P(F/\sim S) = 0.05$

$P(\sim S) = 100 - 20\% \Rightarrow$

$= \dfrac{80\%}{100} = 0.8$

$P(\sim S) = 0.8$

$P(S/F) = \dfrac{0.9 \times 0.2}{0.9 \times 0.2 + 0.05 \times 0.8}$ //

b) Posterior Probability in the equation above is $P(A/B) = P(S/F)$