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Q.1

a) population mean is 72 bpm
   sample mean is 69 bpm

b) null Hypothesis H_0: average resting heart rate of regular users using relaxation app is ~~h~~
   ~~as others~~
   less than others ~~($\mu \geq s$)~~ ($\mu \leq s$)

   alternative Hypothesis H_1: average resting heart rate of regular users using relaxation app is less than
   others ($\mu > s$)

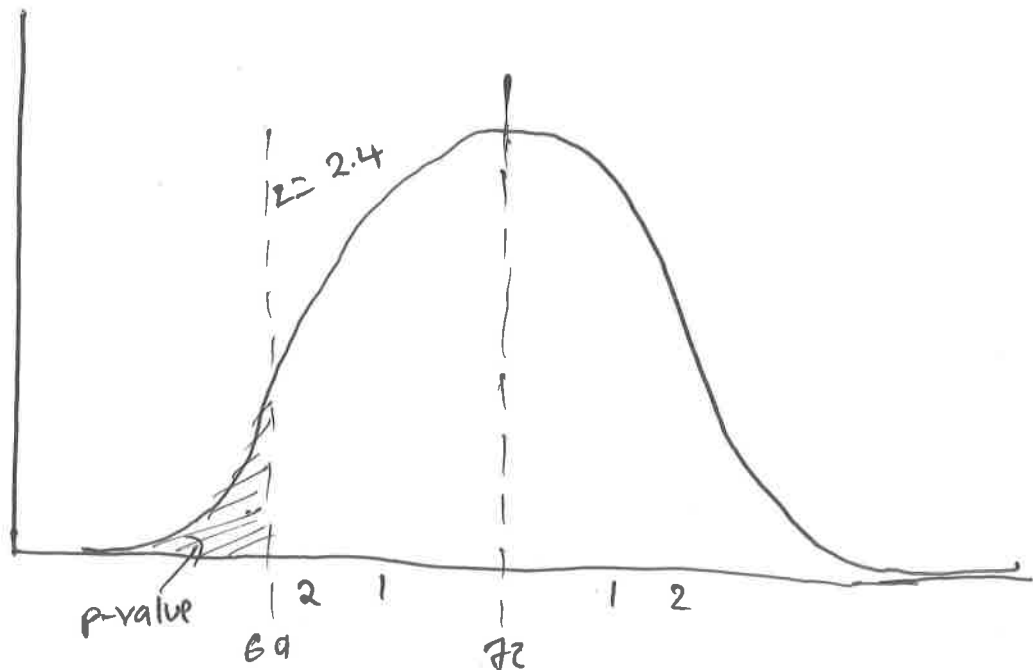c) Standard error is the ~~average of~~ standard deviation of all the sample mean ~~of a~~

$$Se = \frac{\sigma}{\sqrt{n}}$$ where, σ is the standard deviation of the population
                                      n is the sample size

~~z~~   ⑧ $Se = \frac{10}{\sqrt{64}}$

$$= \frac{\cancel{10}\ 5}{\cancel{8}\ 4} = 1.25$$

d) $z = \frac{\cancel{S-\mu}}{Se}$ $\frac{\cancel{\mu - s}}{Se}$ $= \frac{\cancel{72}\ 69 - 72}{1.25} = \frac{-3}{1.25}$ ✗ $\frac{-3}{5/4} = -3 \cdot \frac{4}{5} = -\frac{12}{5} = 2.4$

e)

Q.2. $P(S) = \dfrac{\cancel{0.}20}{100}$ $P(F|S) =$

$P(\sim S) = \dfrac{80}{100}$

Q.2

   a) $P(A) = 0.2$

   b) $P(A|B) =$, It means the probability of the message is spam given that ~~It has been marke filtered~~ filter marks it as 'spam'

   c)
$$P(B) = P(B|A)P(A) + P(B|A^c)P(A^c)$$
$$= 0.9 \times \cancel{0.2}\,\overset{0.2}{} + 0.05 \times 0.8$$

   d) prosterior will be higher because, ~~the evidence~~ $\overset{\text{by the evidence factor}}{}$ when it's a spam it is likely to get flagged as spam but when its not a spam there low chance it gets flagged so p