JASHAN

Q1)

a) Population mean is 72 sample mean is 3 ~~69~~, 3

b) null hypothesis H_0: new relaxation app doesn't reduce the average resting heart rate of regular user

$H_0: R_A \neq R_H$

alternative hypothesis H_1: new relaxation app reduce the average resting heart rate of reagular user

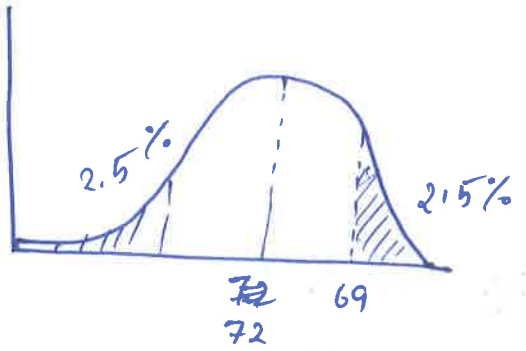
$H_1: R_A \neq = R_H$

c) $S.e = \frac{\sigma}{\sqrt{n}} = \frac{10}{\sqrt{64}} = \frac{10}{4\sqrt{4}} \frac{10}{4\sqrt{4}} 5 \quad \frac{5}{2\sqrt{4}} = 5 \frac{10}{4} \frac{5}{2} = 2.5$

Standard ~~error~~ error is the number of st.error (usually) from the baseline to the mean.

d) $z\text{-score} = \frac{72-64}{S.e} = \frac{x-\mu}{\text{standard error}} = \frac{72-69}{\frac{\sigma}{\sqrt{n}}} = \frac{3}{\frac{5}{2\sqrt{4}}} = \frac{3}{2.5} = \frac{30}{25} = \frac{6}{5} = 1.23$

e)



we reject null hypothesis

Q2)

P(A) = ~~20~~ 0.2 P(F) = 0.2 P(~S) = 0.8

~~P(A/S) = 0.9~~ ~~P(A|B) = P(B/A~~

~~P(ost.~~ P(S/F) = 0.9

~~P(~A/S) = 0.05~~ P(~S/F) = 0.05

a) Prior is P(A), P(A) = 20%, P(S) = 20%

b) Posterior probability is P(A/B)
Posterior probability is the result of the proba-bility which we need to find

c) $P(F/S) = \frac{0.9 \cdot 0.2}{1.8 + 0.05 \cdot 0.8} = \frac{0.9 \cdot 0.2}{1.8 + 0.4} = \frac{1.8}{2.2} = \frac{18}{22} \frac{9}{11}$

P(B/A) = 0.9 P(B/A~) = 0.05
P(A) = 0.2 P(~A) = 0.8.

d) Yes the posterior probability will be higher than the prior as the prior is small now it has increased so it will be higher.