TEST A P denotes Positive Test N denotes negative test

D denotes disease S denotes Safe (no disease)

$P(D) = 0.01$ $P(S) = 0.99$ PRIORS

$P(P|D) = 0.95$ $P(P|S) = 0.10$ CONDITIONALS

LOOKING FOR $P(D|P)$ $P(D|P) = \frac{P(P|D)\,P(D)}{P(P)}$

$P(P) = P(P|D)\,P(D) + P(P|S)\,P(S) = 0.95(0.01) + 0.10(0.99) = 0.1085$

$P(D|P) = \frac{0.95(0.01)}{0.1085} = \boxed{0.0876}$ TEST A

GIVEN A POSITIVE TEST A, THERE IS AN 8.76% CHANCE A PERSON HAS

TEST B P denotes Positive Test N denotes negative test

D denotes disease S denotes Safe (no disease)

$P(D) = 0.01$ $P(S) = 0.99$ PRIORS

$P(P|D) = 0.90$ $P(P|S) = 0.05$ CONDITIONALS

LOOKING FOR $P(D|P) = \frac{P(P|D)P(D)}{P(P)}$

$P(P) = P(P|D)P(D) + P(P|S)P(S) = 0.90(0.01) + 0.05(0.99) = 0.0585$

$P(D|P) = \frac{(0.90)(0.01)}{0.0585} = \boxed{0.154}$ TEST B

GIVEN A POSITIVE TEST B, THERE IS A 15.4% CHANCE PATIENT HAS DISEASE