

25. Solution: B

Let Y = positive test result

D = disease is present (and $\sim D$ = not D)

Using Baye's theorem:

$$P[D|Y] = \frac{P[Y | D]P[D]}{P[Y | D]P[D] + P[Y | \sim D]P[\sim D]} = \frac{(0.95)(0.01)}{(0.95)(0.01) + (0.005)(0.99)} = 0.657 .$$