Q5

Total chance of picking taxi of company A = 80% = 0.8

Total chance of picking taxi of company B = 20% = 0.2

Succen Rate of comp. A = 95% ⇒ P(A) = 0.95

∴ failure rate P(A') = 1 − P(A) = 0.05

Succen Rate of comp. B = 90% ⇒ P(B) = 0.90

∴ failure Rate P(B') = 1 − P(B) = 0.10

Picking a taxi

from company A → 0.8 → chances of getting late → 0.05 ⇒ 0.8 × 0.05

from company B → 0.2 → chances of getting late → 0.10 ⇒ 0.2 × 0.1

P(L) = total prob of getting late = 0.8 × 0.05 + 0.2 × 0.1

P(L) = 0.04

Prob that late taxi is from company A = $\frac{0.8 \times 0.05}{(0.8 \times 0.05) + (0.2 \times 0.1)}$

$$P(A_{Late}) = 0.6666$$

66.67%. Chance that late taxi belongs to company A