Answer on Question #39547 – Math – Other

A chartered Accountant applies for a job in two firms X and Y. He estimates that the probability of his being selected in firm X is 0.7 and being rejected in Y is 0.5 and the probability that at least one of his applications rejected is 0.6. What is the probability that he will be selected in one of the firms?

Solution:

Let
$p(x) = 0.7$ - the probability that a chartered accountant will be selected in firm X
$p(y) = 0.5$ - the probability that a chartered accountant will be selected in firm Y
and, using p(x)=1-q(x),
$q(x) = 0.3$ - the probability that a chartered accountant will be rejected in firm X
$q(y) = 0.5$ - the probability that a chartered accountant will be rejected in firm Y.

Than the probability that a chartered accountant will be selected in one of the firms X or Y
$p(x \cup y) = p(x) + p(y) - p(x \cap y)$.

From the conditions of the problem
$q(x \cup y) = 0,6$ - the probability that at least one of a chartered accountant's applications rejected.
We get
$p(x \cap y) = 1 - q(x \cup y) = 1 - 0,6 = 0,4$.

From the equation above
$p(x \cup y) = 0,7 + 0,5 - 0,4 = 0,8$.

Answer: 0,8.