Answer on Question #46252 – Math – Statistics and Probability

Question:

The probability that a new airport will get an award for its design is 0.16, the probability that it will get an award for the efficient use of materials is 0.24 and the probability that it will get both the awards is 0.11.

(a) what is the probability that it will get at least one of the two awards?

(b) what is the probability that it will get only one of the two awards?

Answer:

a)

$$P(A\ or\ B) = P(A) + P(B) - P(A\ and\ B)$$

where $P(A)$ is probability to get an award for design, $P(B)$ is probability to get an award for the efficient use of materials.

Therefore:

$$P(A\ or\ B) = 0.16 + 0.24 - 0.11 = 0.29$$

b)

The probability that it will get only one of the two awards equals:

$$P = P(A\ or\ B) - P(A\ and\ B) = 0.29 - 0.11 = 0.18$$