Problem.

The probability of conducting an examination on time is 0.95 if there is no strike by students and 0.25 if there is a strike. If the probability that there will be a strike is 0.65, find the probability of holding the examination on time.

Solution:

Let A, B are the following events: $A =$" students strike", $B =$" examination holds in time". Hence,

$$P(B) = P(B|A)P(A) + P(B|A^c)P(A^c) = P(B|A)P(A) + P(B|A^c)\big(1 - P(A)\big)$$
$$= 0.25 \cdot 0.65 + 0.95(1 - 0.65) = 0.495$$

by the Law of total probability.