

Question #18775 The probability that I have to wait at the traffic lights on my way to school is 0.25, find the probability that, on two consecutive mornings, I have to wait on at least one morning. .

Solution. Denote by $A_1 = \{\text{have to wait in the first day}\}$, $A_2 = \{\text{have to wait in the second day}\}$. Thus $P(A_1) = P(A_2) = 0.25$ and A_1, A_2 are independent. We are to find $P(A_1 \cup A_2) = P(A_1) + P(A_2) - P(A_1 \cap A_2) = 2P(A_1) - P(A_1)^2 = 0.5 - 0.0625 = 0.4375$.

Answer. 0.4375.