

Question #13683

the probability that a man will be alive in 25 years is $3/5$ and probability for his wife in 25 year is $2/3$. find probability that a) both will be alive in 25 years b) only the wife will be alive in 25 years

Solution. Denote by M the event that man will be alive in 25 years, W — the wife will be alive in 25 years. Then M and W are independent and $P(M) = 3/5$ and $P(W) = 2/3$. Now we are to find a) $P(M \cap W) = 3/5 \cdot 2/3 = 2/5$ and b) $P(W \cap \overline{M}) = 2/3 \cdot 2/5 = 4/15$. .

Answer. a) $2/5$. b) $4/15$.