What is the probability in decimals that one card's position is unchanged after a hard shuffle of 4 sets of 52 cards each? (answer in decimals)

We have 4 sets of 52 cards each, so deck of cards consists of $4 \cdot 52 = 208$ cards. For example, if we have ace of spades at the first position before shuffling, then we have 4 cards (4 aces of spades), which can be at the first place after the shuffling (for one card from every set). So, the probability that one card's position is unchanged after the shuffling will be $P = \frac{m}{n} = \frac{4}{208} = \frac{1}{52} = 0.019$.