Someone purchases a liability insurance policy, and the probability that they will make a claim on that policy is equal to 0.1. The insurance payout is the amount of money the insurance company must pay if the holder of the policy files a claim. So, if no claim is made, then the insurance payout is just $0; however, whenever a claim is made, the amount of money on the claim, $P$, has an exponential distribution with mean $1,000,000$. If $P$ is less than the maximum insurance policy payout of $2,000,000$, then the insurance payout is equal to $P$, otherwise, the insurance payout is equal to $2,000,000$. What is the expected value of the insurance payout? Hint: Consider the indicator of the event “A claim is filed” and how it can be used to compute the expectation in question.