

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.