In this thesis we analyze a well-known mathematical question known as *the four point problem*. It asks for the probability that four points taken at random in a plane form a convex quadrilateral. Since there is no concrete distribution of the random points stated in the original question, the problem does not have an unequivocal solution. In this work we consider three different probability distributions of the points, namely, continuous uniform distribution, discrete uniform distribution and bivariate normal distribution. Our assumption is that the points are mutually independent. We derive a detailed solution of the four point problem for each of the distributions. Additionally, we state some already existing results.