

1-1. Two pieces of steel are connected by a 6-mm-diameter pin as shown. If they are subjected to a force $P \sim N(1200, 150^2)$ N, determine the probability of failure of the pin which has an allowable shear stress $S_a \sim N(50, 10^2)$ MPa. Neglect friction and assume that P and S_a are independent. (Ans. $p_f = 0.0027$)

