

2-1. Bar AB is hung by two cables CD and EG . The total weight of the bar is $W \sim N(600, 12^2)$ N. A vertical force $P \sim N(700, 10^2)$ N acts on the bar at the middle point. Assume that the allowable normal stress of the cables is $S_a \sim N(100, 9^2)$ MPa. If W , P , and S_a are independent, determine the cross-sectional area of the cables so that the probability of failure of each cable is less than 10^{-4} . (Ans. $A > 9.79 \times 10^{-6} \text{ m}^2 = 9.79 \text{ mm}^2$)

