

18. A force $P \sim N(60, 6^2)$ kN is applied to a truss. The diameter of rod AB is $d = 0.1$ m. If the yield stress of rod AB is $S_y \sim N(30, 5^2)$ MPa, and P and S_y are independent, determine the probability of failure using the First Order Second Moment Method.

Answer: $p_f = 5.93(10^{-4})$

