

1-17. The system is subjected to a normally distributed force $P \sim N(3200, 350^2)$ lb as shown. If the maximum allowable bending moment in beam AC is $M_a \sim N(3500, 400^2)$ ft·lb at point B , what is the probability of failure? The diameter of the pulley is $d = 1$ ft and assume P and M_a are independent. $L_1 = 2.25$ ft, $L_2 = 1.5$ ft, and $L_3 = 1.75$ ft. (Ans. $p_f = 3.0097(10^{-3})$)

