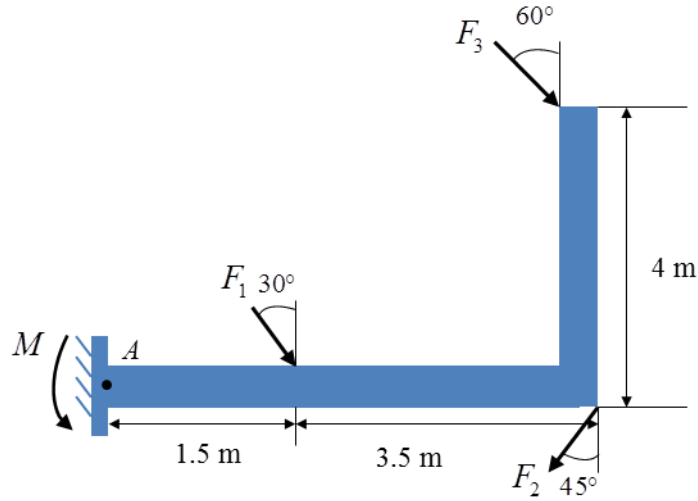


22.  $F_1, F_2,$  and  $F_3$  are independently and normally distributed, and their distributions are  $F_1 \sim N(1200, 80^2)$  N,  $F_2 \sim N(1500, 130^2)$  N, and  $F_3 \sim N(2000, 150^2)$  N, respectively. Determine the distribution of the resultant moment  $M_A$  about point A.



**Solution:** The distribution of  $M_A$  is  $M_A \sim N(18790, 795^2)$  N·m .