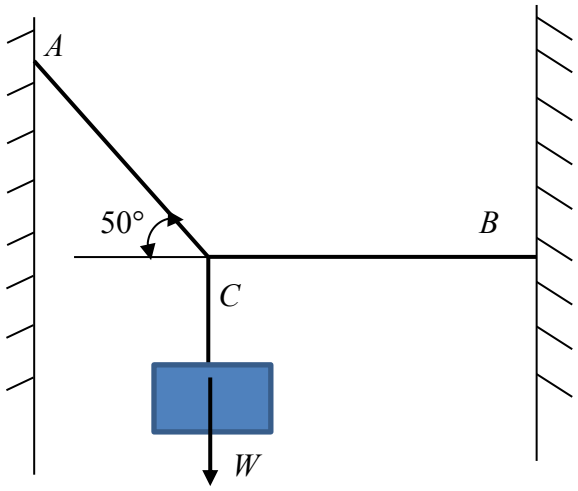
7. The weight follows a normal distribution $W \sim N(850, 7^2)$ N. The resistances of cable *AC* and cable *AB* are also normally distributed with $S_{AC} \sim N(1130, 6^2)$ N and $S_{BC} \sim N(870, 10^2)$ N, respectively. Determine which cable is more likely to break. W, S_{AC}, and S_{BC} are independent.



Solution

The probabilities that cable *AC* will break is 0.031 and cable *BC* is 0.0507. Thus, cable *BC* is more likely to break.