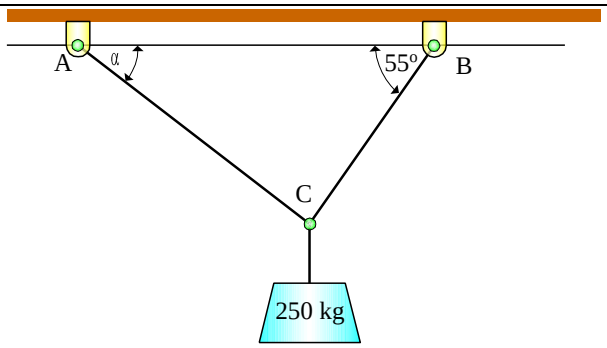
ANF 1440 Assignment #3

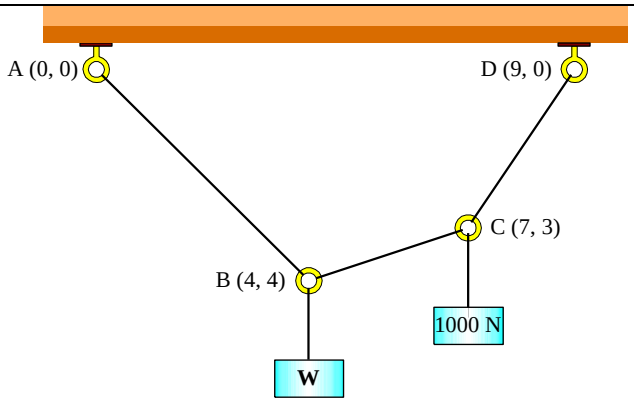
1 The two cables AC and BC support a 250-kg block.

(a) For what value of α is the tension in cable AC minimum?

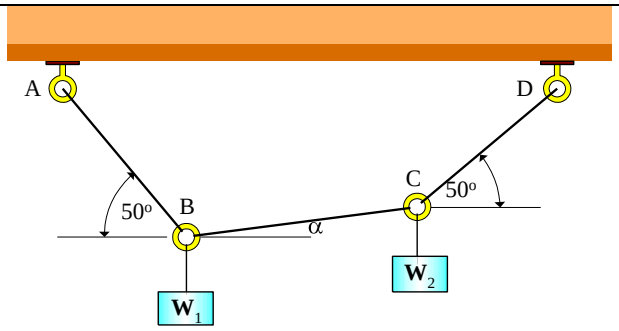
(b) What are the corresponding values of the tension in cables AC and BC?



3. A weightless rope that is fastened at two points A (0, 0) and D (9, 0) carries a 1000 N weight and an unknown weight **W** as shown in the figure. The points of attachment of the weights to the rope lie at B (4, 4) and C (7, 3). Determine the tensions in each of the ropes and the weight **W**.



3. The weights are supported with cables as shown in the figure. If $\mathbf{W}_1$ weighs 50 N and $\mathbf{W}_2$ weighs 40 N, determine the tension in each of the cables and the slope of cable BC.



BONUS:

Two flower pots are supported with cables as shown in the figure. If pot *A* weighs *10 N* and pot *B* weighs *8 N*, determine (i) the tension in each of the cables, and (ii) the slope of cable *BC*.