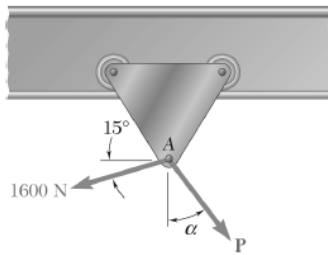




Assignment #1

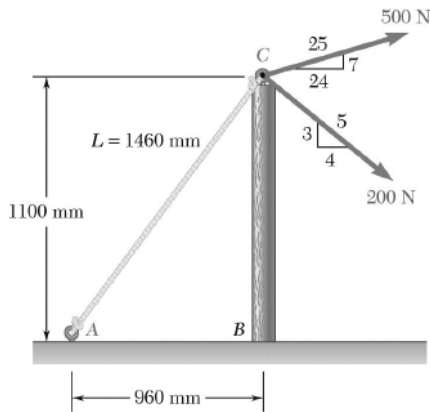
Dear students,

Below are the problems for this week. Please solve problems #2.36 and 2.47 and hand them in during the next DGD (or at the beginning of the one after), to your TA.



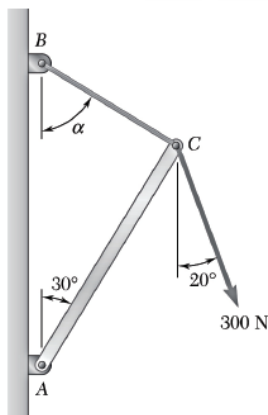
PROBLEM 2.7

A trolley that moves along a horizontal beam is acted upon by two forces as shown. Determine by trigonometry the magnitude and direction of the force P so that the resultant is a vertical force of 2500 N.



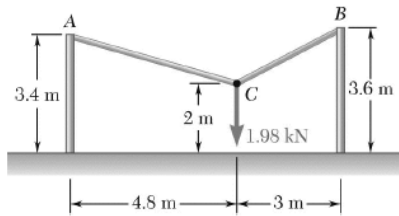
PROBLEM 2.36

Knowing that the tension in rope AC is 365 N, determine the resultant of the three forces exerted at point C of post BC .



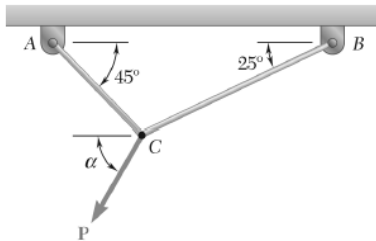
PROBLEM 2.46

Knowing that $\alpha = 55^\circ$ and that boom AC exerts on pin C a force directed along line AC , determine (a) the magnitude of that force, (b) the tension in cable BC .



PROBLEM 2.47

Two cables are tied together at C and loaded as shown. Determine the tension (a) in cable AC , (b) in cable BC .



PROBLEM 2.61

For the cables of Problem 2.48, it is known that the maximum allowable tension is 600 N in cable AC and 750 N in cable BC . Determine (a) the maximum force P that can be applied at C , (b) the corresponding value of α .

Good luck,