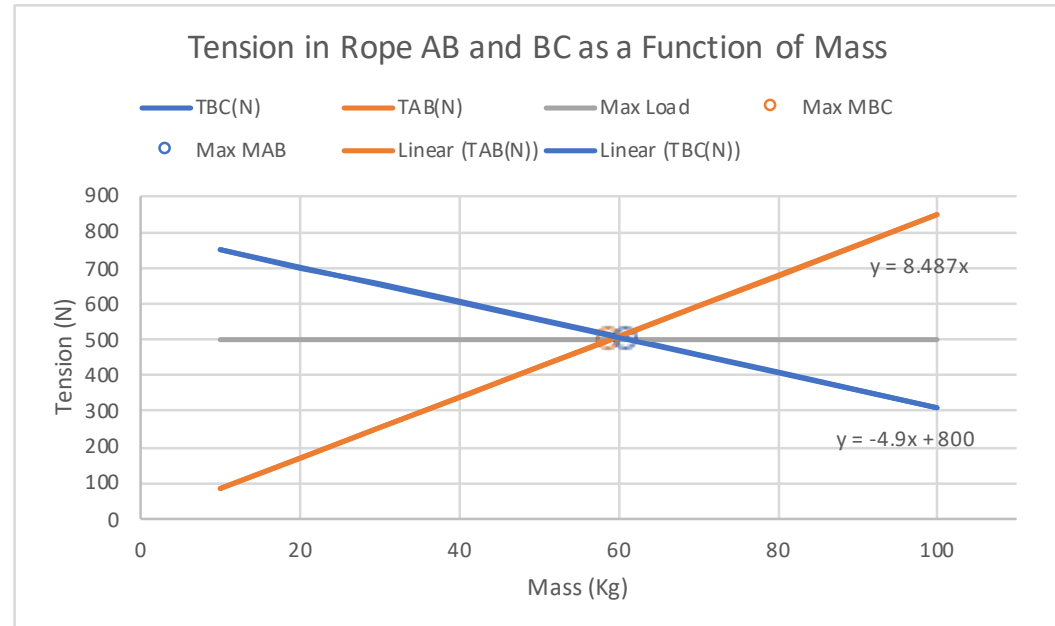


Problem 2

In the support system shown in the diagram, assume again load $P = 800 \text{ N}$. If the maximum allowable force in either cable AB or BC is 500 N , what is the maximum mass of the cylinder? Solve this problem by plotting the tension in the cables as the mass of the cylinder increases. The ordinate axis (y-axis) should show cable tension, and the abscissa (x-axis) should show the cylinder mass. Create a legend to label the two different cable tensions, and be sure your plot is labeled correctly with a chart title and axes titles with correct units.

Mass(Kg)	$T_{BC}(\text{N})$	$T_{AB}(\text{N})$
10	751	84.87
20	702	169.74
30	653	254.61
40	604	339.48
50	555	424.35
60	506	509.22
70	457	594.09
80	408	678.96
90	359	763.83
100	310	848.70



Max M_{BC} 58.91 N

Max M_{AB} 61.22 N

The chosen cables cannot support the current load placed on the system with cable BC breaking at 58.9 N before cable AB breaking at 61.2 N .