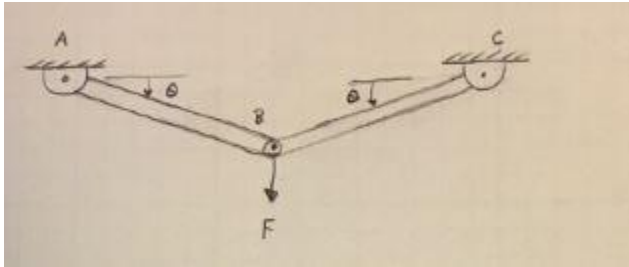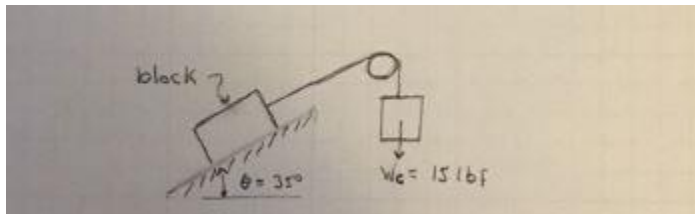# ME 122 Homework 3

Q. 1 A force **F** is applied at point B as shown below, resulting in tension **T** shared evenly by the two bars AB and BC. Calculate **T** as θ varies from **0** to **60°**. Plot the results and comment on the trend.

Q.2 In the sketch shown below, if the slanted surface is frictionless, how much the suspended block weigh?

Q. 3

For the diagram shown below, the beam which has a mass of 25 kg/m supports a suspended mass of **210 kg** and is supported by an inclined cable. Construct a Free Body Diagram for the beam and use it to determine the resultant pin reaction at point **A** and the tension in the cable. **Hints**: The weight of the beam can be represented by a single force at the midpoint of the beam, the gravitational constant is **9.81 m/s²**.