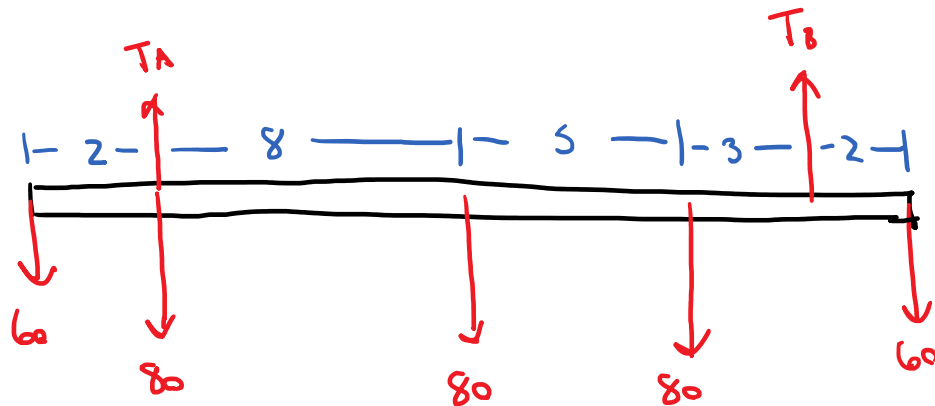
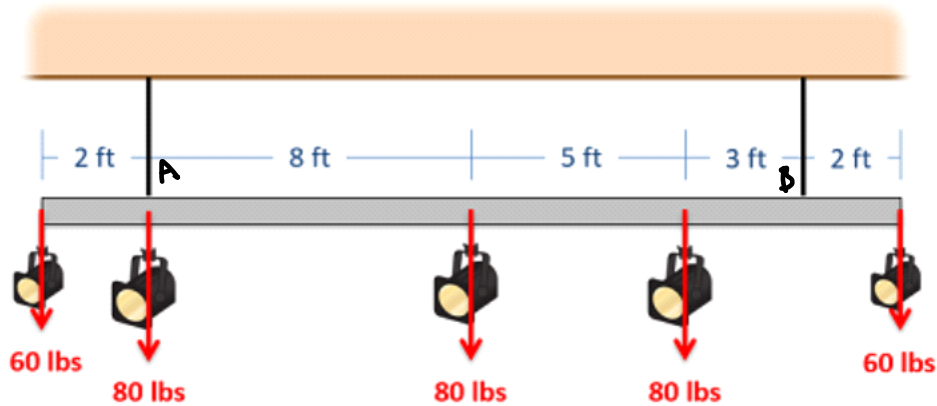


## Problem 1

A lighting gantry is hanging from the ceiling via two cables and supporting several stage lights as shown below. Assume the gantry itself has a negligible weight. Draw the shear and moment diagram for the gantry.



$$\sum F_y = T_A + T_B - 60 - 80 - 80 - 80 - 60 = 0$$

$$\sum M_A = (60)(2) - (80)(8) - (80)(13) - (60)(18) + (T_B)(16) = 0$$

$$\rightarrow T_B = \frac{(80)(8) + (80)(13) + (60)(18) - (60)(2)}{16} = \underline{165 \text{ lbs}}$$

$$T_A = 360 - 165 = \underline{195 \text{ lbs}}$$