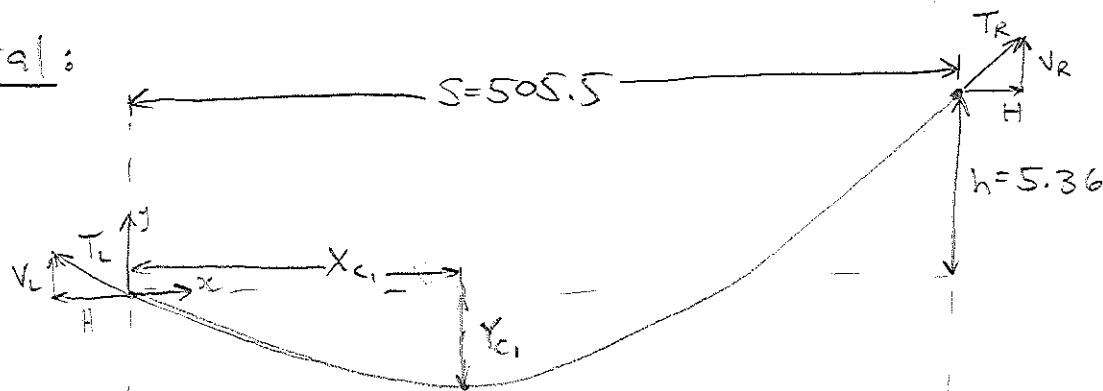


Initial:



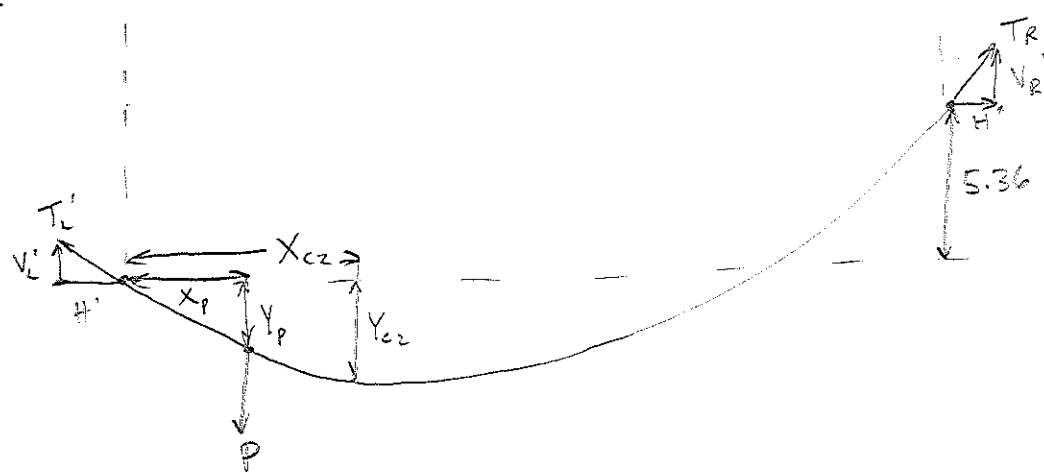
Assume inelastic

$W = \text{unit weight} = 0.636 \frac{\text{kg}}{\text{m}}$
of cable

$d = \phi \text{ of cable} = 31.43 \text{ mm}$

$H = 20100 \text{ N} = 2048.93 \text{ kg}$

Final:



$P = 181.837 \text{ kg}$
 $X_P = 100 \text{ m}$

Initial curve is catenary obeying $y(x) = Y_{c1} + a \left[\cosh\left(\frac{x - X_{c1}}{a}\right) - 1 \right]$

where $a = \frac{H}{W} = \frac{2048.93 \text{ kg}}{0.636 \frac{\text{kg}}{\text{m}}} \approx 3221.588 \frac{1}{\text{m}}$

How does point load P affect X_{c2} , Y_{c2} and H ? $X_{c2} = \frac{S}{2} + a \sinh^{-1} \left[\frac{h \sqrt{e^{S/a}}}{a (1 - e^{S/a})} \right]$

$$Y_{c2} = -a \left[\cosh\left(\frac{-X_{c2}}{a}\right) - 1 \right]$$