\[ \delta X_c = 1 \delta \theta = 0.1 \delta \theta \quad \text{and} \quad \delta \theta = 10 \delta X_c \]

Applying principle of virtual work in kinematics,

\[ 0 + \left[ (50+20+15)(9.81)(5) \right] (\delta X_c) \left( \frac{Z}{25} \right) \]

\[ = (50+20+15) v_c (\delta X_c) + \frac{1}{2} (20+15) (0.1) \left( \frac{v_c}{0.1} \right) (10 \delta X_c) \]

\[ \therefore v_c = \square \]

\[ \vec{v}_c = \square \]