V_{is} $P_i = P_f$

$$m_s v_{is} = m_{stp} V_{fstp}$$

$$V_{is} = \frac{m_{stp} V_{fstp}}{m_s}$$

K

$$E_i = E_F$$

$$PE_s = K_s$$

$$\frac{1}{2}kx^2 = \frac{1}{2}m_s v_s^2$$

$$kx^2 = m_s v_s^2$$

$$k = \frac{m_s v_{s_i}^2}{x^2}$$

$$k = \frac{m_s v_{is}^2}{x^2}$$

$$\frac{(m_s + m_p)(v_{pi})^2}{m_s}$$

$$\sqrt{2gh}$$

$$l(1-\cos\phi)$$

Steel = 8.3g

Pendulum = 35g