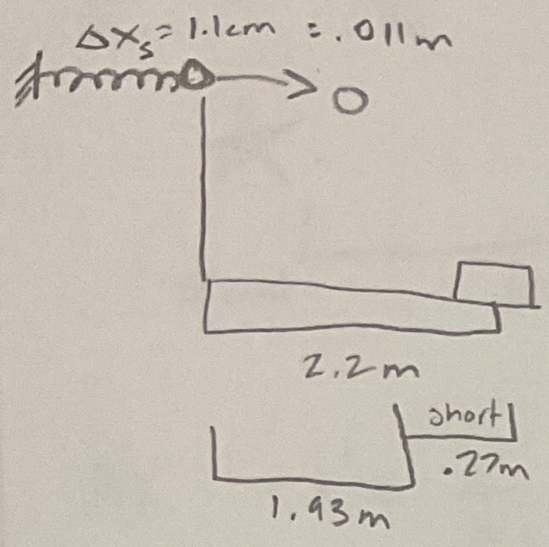
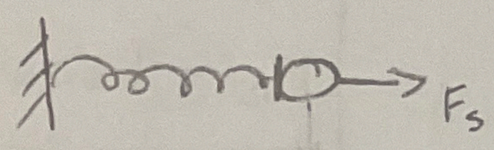
Gretchen Scipel. 59

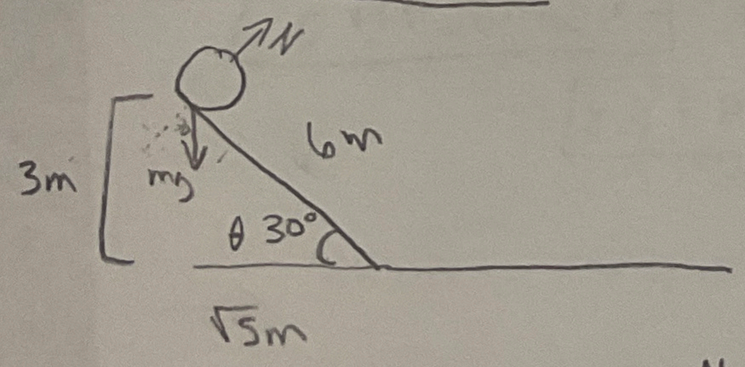
Question 9





X	Y
$\Delta x = 1.93m$	$\Delta y =$
$V_i =$	$V_i =$
$V_f =$	$V_f =$
$a = 0$	$a =$
$\Delta t =$	$\Delta t =$

Question 10

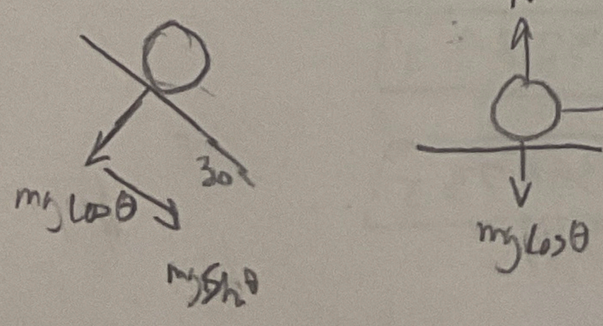


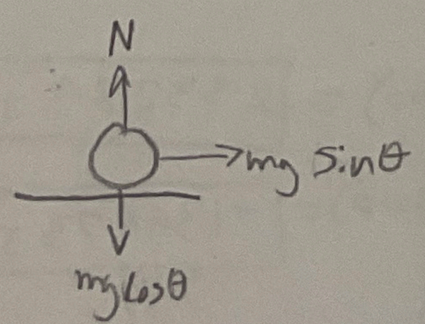
$r = .2m \quad m = 2kg$

$$\alpha = \frac{\tau}{I} = \frac{r \cdot mg\sin\theta}{\frac{1}{2}mr^2} = \frac{(.2)((2)(10)\sin(30))}{\frac{1}{2}(2)(.2^2)} = 50$$

$$a_t = r\alpha = (.2)(50) = \boxed{10\ m/s^2 = a_t}$$

$$\therefore KE_{rot} = \frac{1}{2}I\omega^2 = \frac{1}{2}\left(\frac{1}{2}(2)(.2^2)\right)(2.19^2) = \boxed{0.096J}$$





$$\frac{3}{H} = \sin(30)$$

$$V_f^2 - \cancel{V_i^2}^{0} = 2a\Delta x$$

$$V_f = \sqrt{2(10)(6)}$$

$$V_f = \sqrt{120}$$

$$\omega = r \cdot v$$

$$(.2)(\sqrt{120})$$

$$\omega = 2.19$$