Question #9

Xihe Z. Wang

$D = 2.2\,m = 220\,cm$

~~$A = 27\,cm$~~

$S = 1.1\,cm$

$g = 10\,m/s^2$

$\frac{1}{2}mv^2$ ~~=~~

~~$220 - 27 = 193$~~

$2.2 - 0.27 = 1.93$

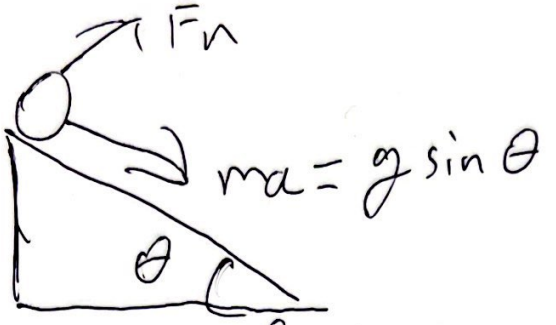
$\left(\frac{2.2}{1.93}\right)(0\ 1.1)$

$= 1.254\,cm$

Question #10

xihe

@2.Wang



$R = 0.2m = 20cm$

$m = 2kg$

$h = 3m$

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$a = \sin 30^\circ = 5\ m/s^2$

b. $mgh = \frac{1}{2}mv^2$

$v = \sqrt{2gh}$

$v = \sqrt{2 \times 10 \times 3} = 7.746\ m/s$

$K_{rot} = \frac{1}{2}Iw^2$

$I = (\frac{1}{2})mR^2$

$K_{rot} = \frac{2}{6} \times 0.2 \times 2 \times 60.001$

$= 8J$

Question #11

Xihe
2. Wang

a $\frac{PV}{T} = \frac{PV}{T}$ $\frac{4.5}{T_a} = \frac{1.2}{300}$ $\frac{P_b V_b}{T_b} = \frac{P_c V_c}{T_c}$

b

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Question 12

a $10.8 \times 3 \times 10^9 = 3.24 \times 10^{16}$

$= 1.08 \times 10^8$ seconds

b $\frac{1.08 \times 10^8}{1.05} = 1.02 \times 10^8$ seconds