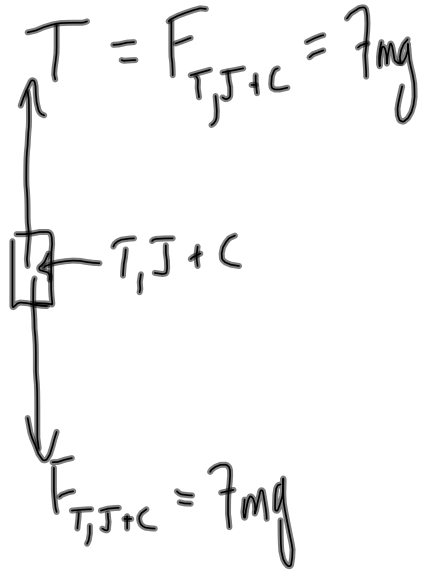
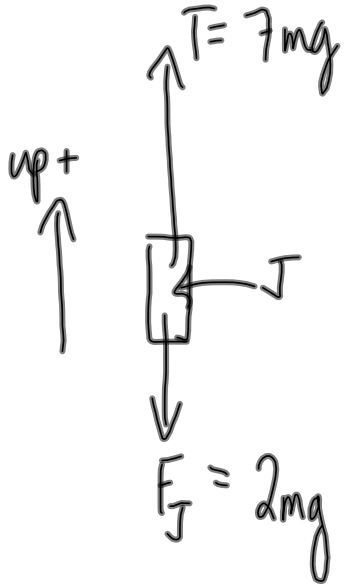
Review

26.





let m be Cheeta's mass
2m be Jane's mass
4m be Tarzan's mass
7m

$\vec{F}_{net} = m\vec{a}$

$T - F_J = ma$

$7mg - 2mg = (2m)a$ (Jane's mass)

$a = \frac{5g}{2}$

$F_{T,J+C} = 7mg$

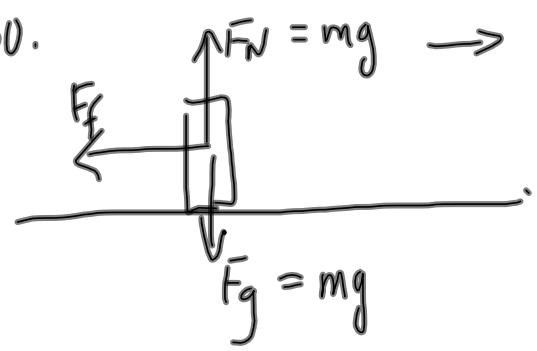
$\Delta d = \frac{1}{2}a(\Delta t)^2$

$(\Delta t)^2 = \frac{2\Delta d}{a}$

$\Delta t = \sqrt{\frac{2(60m)}{\frac{5}{2}(9.81 m/s^2)}}$

If $a = \frac{5}{2}g$, $\Delta d = 60m$, $V_1 = 0$, $\Delta t = ?$ → $\Delta d = V_1\Delta t + \frac{1}{2}a(\Delta t)^2$

30.



$\vec{F}_{net} = m\vec{a}$

$-F_f = ma$

$-\mu F_N = ma$

$-\mu mg = ma$

$a = -\mu g$

$a = -0.20(9.81\ m/s^2)$

$a = ??$

$V_1 = 2.0\ m/s$

$V_2 = 0$

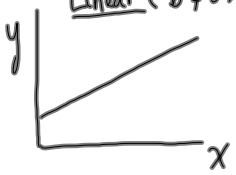
$\Delta d = ?$

$\mu = 0.20$

$V_2^2 = V_1^2 + 2a\Delta d$

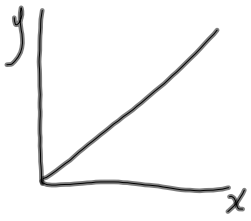
Graphical Analysis of Data

Linear ($b \neq 0$)



$y = mx + b$

Linear ($b = 0$)



$y \propto x$

$y = kx$

$(y = mx + b)$

A plot of y vs x will be linear with a slope of k and a y-intercept of zero.

Power Curve

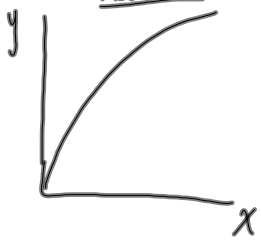
$y \propto x^n$

$y = kx^n$

$(y = mx + b)$

A plot of y vs x^n will be linear with a slope of k and a y-intercept of zero.

Root Curve



$y \propto \sqrt[n]{x}$

$y = k\sqrt[n]{x}$

$(y = mx + b)$

A plot of y vs $\sqrt[n]{x}$ is linear with a slope of k and a y-intercept is zero.

Inverse Curve

$y \propto \frac{1}{x^n}$

$y = k\left(\frac{1}{x^n}\right)$

$(y = mx + b)$

A plot of y vs $\frac{1}{x^n}$ will be linear with a slope of k and y-intercept of zero.