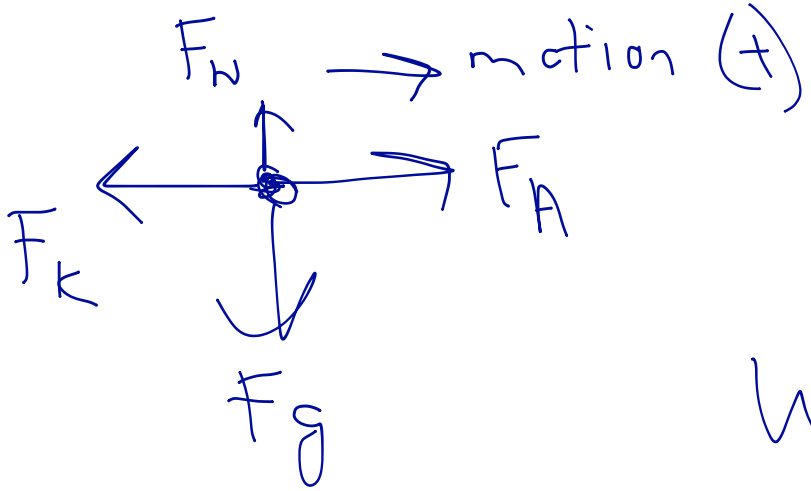
Positive and negative work

- Objects can experience several forces at the same time.
- Total work done is equal to the algebraic sum of the work done by all of the forces acting on the object

Positive and Negative work

- Adam pushes a bowl of cereal along a level counter a distance of 1.3 m. What is the net work done on the bowl if Adam pushes the bowl with a force of 4.5 N and the force of friction between the bowl and the counter is 2.8 N ?



$W_{Adam} = F \Delta d$

$= (4.5N)(1.3m)$

$W_{Adam} = 5.85J$

$W_{Friction} = F \Delta d$

$= (-2.8N)(1.3m)$

$= -3.64J$

$W_{NET} = 5.85J + (-3.64J)$

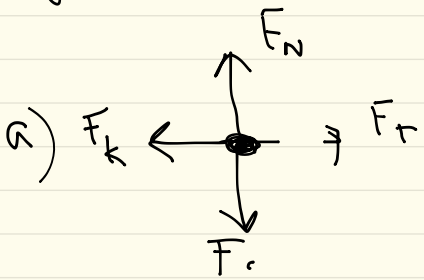
$W_{NET} = 2.2J$

Questions

- Pg. 229 #1-5,7,11

Read pgs 222-228

Pg 229 #4.

a) 

No F_{NET} due to constant velocity ($\vec{a}=0$)

b) $F = F_K$

$W = F_\Delta d$

$250\,J = F(12\,m)$

$\frac{250\,N\cancel{m}}{12\,\cancel{m}} = F$

$20.8\,N = F$

$\therefore F_T = 21\,N$

c) $F_K = 21\,N$

$W_{Friction} = 250\,J$

$20.8\,N \times 12\,m = 250\,J$

Pg. 229 #35

$W_{Friction} = F_k \Delta d$

$= (34N)(12m)$

$= 408J$

$W_{FRICTION} = 410J$

$\leftarrow$

$W_{child} = 830J \rightarrow$

$W_{Total} = 830J - 410J$

$= 420J$