General announcements

Work Lab

- Things that will make this lab way easier:

  - Please read carefully and don't skip steps!
  - Record data carefully for each question, and keep track of units, signs, and what you've recorded. Practice blurbing!
  - Every time you move or rotate the force transducer, you need to re-zero it (not recalibrate, just zero it out)

  - In your write-up, remember to record all data at the beginning, with labels and blurbs as to what each number represents.
  - When doing the calculations and analysis, **BLURB**!
    - For each question, start with a brief statement of what you're doing in that part.
    - Any time you make an assumption, substitute in values, make a logical jump that isn't just a clear algebraic step, write a brief blurb to explain it!

  - Remember that an outsider should be able to read an understand your write-up WITHOUT looking at the lab handout.

Back to our realm of work and energy…

- So we know that $W = \vec{F} \cdot \vec{d} = Fdcos\theta$, and work causes a change in energy.
  - + work adds energy, - work removes energy
- Let's assume that **θ** = 0, so W = Fd. We can restate this as:

$$W = (ma)d$$

- Assuming the net force is constant, the acceleration will be constant. This means we can use kinematics:

$$a = \frac{v_2 - v_1}{\Delta t} \quad \text{and} \quad d = v_{avg}\Delta t = \left[\frac{(v_2 + v_1)}{2}\right]\Delta t$$

- So we can re-write net work as…