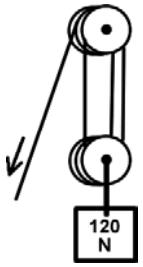
PreAP: due Mon., Nov 7 (Assigned: Thurs., Nov 3)
Reg: due Tues., Nov 8 (Assigned: Fri., Nov 4)

Energy 3

1. The picture on the right show what kind of simple machine?
2. How many support ropes does the picture show?
3. What is the mechanical advantage of the simple machine shown?
4. How much force is necessary to lift the object?



5. To lift the object 2 m, how much rope will you have to pull out?

6. Label the following as Work, Kinetic Energy, Potential Energy, or Elastic Potential Energy.
   A.____ Friction slowing something down.
   B.____ A car while moving.
   C.____ A projectile at the top of it's path.
   D.____ The kind of energy a dropped object is gaining.
   E.____ Necessary to speed something up.
   G.____ When I pull back on a catapult it gains this kind of energy.
   H.____ Before a car slows down it has this kind of energy.
   I. ____ Air friction on a falling object is what kind of energy?
   J. ____ Our projectile launchers use this kind of energy.
   K.____ To slow something down you have to do this.
   L.____ When you lift something up you are doing this.
   M. ___ After you lift something up you give the object this.
7. A person uses 65 joules to push an object 6 meters. How much force did they use?

8. A 8 kg rock has 120 joules of energy while up on the top of a cliff. How high is the cliff?

9. A car going 6 m/s has 1200 J of energy. Find the mass of the car.

10. You have two light bulbs: a 60 W bulb and a 80 W bulb.
    A. Which bulb is more powerful?
    B. How long would it take for the 60 W bulb to use up 360 J of energy?

    C. How long would it take the 80 W bulb to use up 360 J of energy?

    D. Which bulb worked faster?
    E. Which bulb did more work?
    F. So, does a more powerful object do more work than a less powerful object?

MORE ON BACK

11. An 8 kg block going 6 m/s is stopped by friction.
    A. While it was moving, the block had what kind of energy?
    B. Calculate the block's energy while it was moving.

    C. Friction is a force so it is what kind of energy?

    D. By the Law of _____ the energy of the _____ block before was transformed into the _____ done by friction.

    E. If it took friction 10 m to stop the block, find the force of friction.

    F. You can easily find the normal force on the block, so find the coefficient of friction (μ).

TAKS

Remember: If you change the number of **protons** you change the **element**;
If you change the number of **neutrons** you change the **isotope**;
If you change the number of **electrons** you make an the **ion**.

12. If Lithium (which has _____ protons) added 2 protons what element would it be?
13. If Oxygen (which has _____ protons) subtracted 3 neutrons, what element would it be?
14. If Magnesium (which has _____ protons) lost 2 electrons, what element would it be?
15. Oxygen has an oxidation number 2-. That means oxygen lost or gained electrons?
16. Fluorine has ____ protons, so a **neutral** fluorine atom would have ____ electrons.
17. Atoms tend to gain or lose electrons until they have 8 and do so as easily as possible (they are lazy, like Mr. Murray). If they have more than 4 valence electrons it is easier to gain or lose electrons?
18. If they have less than 4 valence electrons it easier to gain or lose electrons?
19. Sulfur has ____ valence electrons.
20. Sulfur will gain or lose electrons to have ____ valence electrons?
21. Therefore Sulfur's charge will be:
    (This is sulfur's oxidation number.)