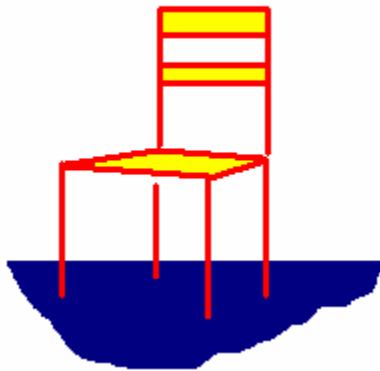


## DAY 2

### Homework Assignment (see syllabus for homework collection information)

1. Rank the following in order of the momentum they possess - a Honda Civic moving at 35 mph; a cyclist moving at 35 mph; a dog running at 20 mph; a Honda Civic moving at 70 mph; a Ford F350 truck moving at 70 mph.
2. Identify all the energy transformations that are present in a pole vault event.
3. A girl uses a slingshot to shoot a rock high into the air. Identify all the energy transformations between when the girl puts the rock in the sling and when the rock comes to rest on the ground.

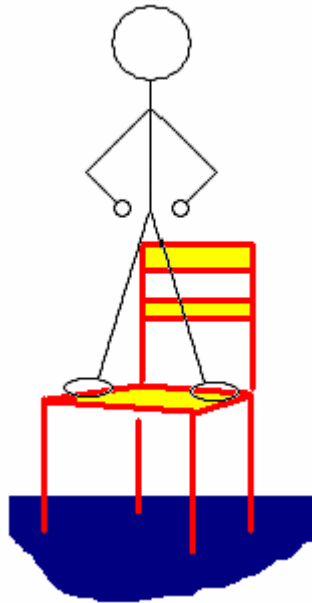


4. Create a FBD for the chair.

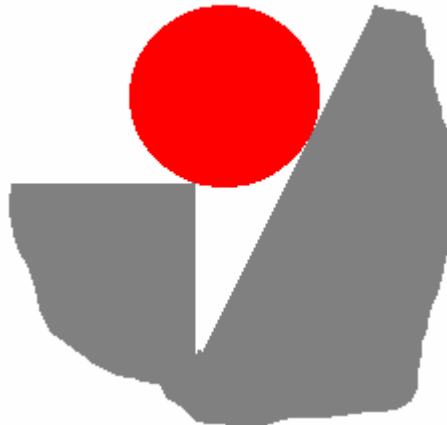


From [www.justvault.com](http://www.justvault.com)

5. Create FBD's for both the chair and the person.



6. A steel drum (red) rests in a concrete embankment as shown at right. Create an FBD for the drum.



7. In terms of power, explain why roads going up mountains are full of switchbacks and hairpin turns.
8. Gallons, quarts, pints, and cups are all English units of measure, and are largely based on fractions of 2. There are four quarts in a gallon, two pints in a quart, and two cups in a pint. You have two galloon jugs. Using just these, can you measure out pint of water? If so, how?
9. Liters are metric units, based on the decimal system. There are 1000 milliliters in 1 liter. You have two liter bottles. Can you measure out 100 ml of water using just those two bottles? If so, how?