Due: 11/22/04 (Monday)
Assigned: 11/18/04 (Thursday)

Momentum 1

Put this equation on your equation sheet: p = mv
Add this to your variable chart:

Page #	Variable	Units	Variable Name	Notes:
	p (small)		momentum	How hard it is to stop something. p =0, if v = 0.

1) A 250 kg object is moving 3.4 m/s. Use the equation to find the momentum AND the units. (There is no special units for momentum.)

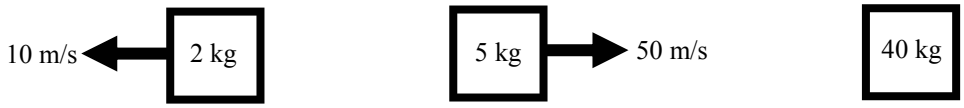
2) A 35 kg object has -450 kgm/s of momentum. Find its velocity.

3) Which has more momentum? (choose one for each)
A. a car when going fast or slow?
B. a heavy or light object going 10 m/s?

4) Momentum is a vector quantity, this means momentum has: _____ and _____.
(Use the definition of a vector from Chapter 2.)

As a vector, momentum can be either positive and negative. We will call an object moving left or down negative and an object moving to the right or up, positive.

5) Find the momentum of the following objects (remember the above statement):



A. _____ B. _____ C. _____

6) Which of the objects in #5 has the momentum with the greatest magnitude (disregard direction)?

7) Which of the objects in #5 has the most inertia?

8) Find the TOTAL (net) momentum in #5.

9) A 10 kg object is 5 m/s moving to the left while a 3 kg object is going 4 m/s to the right.
A) Find the momentum of the 10 kg object (we'll call this momentum 1 or "p_1"):

B) Find the momentum of the 3 kg object (p_2):

C) Find the total momentum of both objects (Σp).

10) A 25 kg object moving 3 m/s to the right while a 30 kg object is moving 4 m/s to the right (yes, same direction).
Find Σp for this system.

11) A 6 kg object is shot at 25 m/s at an angle of 30^{o} to the horizon. If it is shot from the ground to the ground, find its range. (*This is called review for the final.)*

12) A) What question do you ask to transfer between position vs time and velocity vs time? (Hint: use the equations.)

B) What question do you ask to transfer between velocity vs. time and acceleration vs. time?

C) transfer the motion of the position vs. time graph below to velocity vs. time and acceleration vs. time.