**Name: .**

**Momentum Calculation Practice**

Momentum Basics:

Variable: \_\_\_ Formula: \_\_\_\_\_\_ Units: \_\_\_\_\_\_\_\_

*Directions: Complete the momentum calculations below.* ***Show your work and write out all formulas.***

Velocity: $v=\frac{∆x}{∆t}= \frac{x\_{f}-x\_{i}}{t\_{f}-t\_{i}}$ Weight: $F\_{g}=mg$

1. Find the momentum of a 450 kg car moving at 24 m/s east.
2. A ball’s momentum is 56 kg m/s north. If its velocity is 3.7 m/s north, find the ball’s mass.
3. A 940 kg car covers 75 meters in 15 seconds. The car’s motion is in the negative direction. If it moves at a constant velocity, find it’s momentum. Hint: Find the average velocity first, then find momentum.
4. A 300 N boat moves downstream at 4 m/s south. Find its momentum.

Hint: Find the boat’s mass first, then find momentum.

1. A 12-kg cart’s momentum is a constant 360 kg m/s west over 6 seconds. How much distance does it cover in those 6 seconds? Hint: On this multi-concept problem, list all of the given information (include variables and units). Next, examine the formulas above to determine which TWO of them you will need to use to solve.