**Calculating Momentum**

**Momentum is mass times velocity. It is abbreviated with a “p”.**

**The equation is:**

**p = mv**

**Solve the following problems in the space provided. Be sure to make a list, write the equation, rearrange if necessary then substitute in the numbers and solve using the correct units:**

1. **A 100Kg man is running at 5.6m/s. What is his momentum?**
2. **Scott Macartney, a US Olympic Ski Team member was going 88 miles per hour (39 m/s) in the downhill ski race when lost his balance and fell. He has a mass of 65Kg. What was his momentum?**
3. **If a 40 Kg object has a momentum of 400Kg\*m/s, how fast is it traveling?**
4. **If an object traveling at 20 m/s (about 44 miles per hour) has a momentum of 800Kg\*m/s, what is the objectʼs mass?**
5. **How fast would a ping pong ball (mass 0.0027Kg) have to be traveling to have the same momentum as Scott Macartney just before he fell?**
6. **A locomotive has a mass of 200,000 Kg. It is moving at 10 mph (4.5 m/s). How fast would a car (mass 1000Kg) be traveling to have the same momentum?**
7. **In a sentence or two, describe what would happen if the car and locomotive in #6 above ran head on into each other.**
8. **If you can run 15 miles per hour (6.7 m/s) while holding a 8 pound (3.5 Kg) shot put, how much momentum does the shot put have?**