

Honors Physics: **Momentum # 3** Name: \_\_\_\_\_

**Objectives: P3.5a, P3.3c, P3.4g, P3.3b**

**Directions:** Please show your work for full credit.

1. A 40 kg bazooka shoots at 3kg projectile. If the bazooka recoils at 6m/s, what was the speed of the projectile?

\_\_\_\_\_ m/s

2. Two motorcycles are driving in towards each other. If the 300kg cycle is going 25m/s (right) and strikes the 250kg cycle going 30m/s(left), what is the resulting speed and direction?

\_\_\_\_\_ m/s

\_\_\_\_\_ direction indicate right or left

3. A person on a bike(total mass 90kg) is riding at 8m/s when a raccoon drops straight down on top of her. If the new speed is 3m/s, what was the raccoon's mass?

\_\_\_\_\_ kg

4. A 50kg kid running to the right at 10m/s to get bosco breadsticks collides with a 60kg student also running to the right at 5m/s. What was the resulting speed?

\_\_\_\_\_ m/s

5. Roger(80kg) runs to the left and jumps into a swing that is holding Sally(60kg). Together the swing up into the air 3m high. What was Roger's original speed?

\_\_\_\_\_ m/s