Conservation of Momentum Practice Problems.

- Useful when analyzing <u>collisions and explosions</u>
- Helpful to break the problem up into <u>before</u> collision/explosion & <u>after</u> collision/explosion
 - 1. An ice skater of mass 60 kg is at rest on a frictionless surface. Someone throws her a ball with a velocity of 20 km / hr to the right. After she catches it, what is the velocity of the woman (and ball)?



2. A car of mass 1000 kg is at rest when a truck of mass 3000 kg rear ends it with a velocity of +10 m/s. If the car has a velocity of +15 m/s after the collision, what is the velocity of the truck after the collision?



General Physics Lecture Worksheet – Momentum, Impulse, & Conservation of Momentum

- Name:
- 3. A small fish is cruising along with a speed of 2 m/s when another fish, 3 times more massive, comes head on at 2 m/s and swallows the smaller fish. What is the final speed of the larger fish?



4. A firecracker of mass 20 grams sits at rest on the grass. After it explodes, one piece of mass 12 grams flies off to the right at 50 m/s while the rest of the fire cracker flies off to the left. What speed does the second piece have?

