Physics Chapter 6 Review

Know the following vocabulary words & how they are represented in equations:

* Momentum
* Impulse
* Law of Conservation of Momentum
* Newton’s 3rd Law
* Perfectly Inelastic Collisions
* Elastic Collisions
* Inelastic Collisions

Understand the following concepts:

* How do force and momentum relate?
* Know the impulse-momentum theorem
* How do momentum and stopping times relate?
* Increasing the time interval does what do force?
* What happens to momentum during each type of collision?
* What happens to momentum when objects push away from each other?
* How do newton’s 3rd law and the law of conservation of momentum relate?
* What happens to kinetic energy during the different types of collisions?
* What type of collisions are seen in “real life”?

Know the equations from this chapter to solve for missing values.

Practice Calculation Problems

(These are problems that will be on your quiz but with different numbers. This means that if you don’t know how to solve them you will not know how to solve them on the quiz!)

1. A 2.0 x 105kg spacecraft is traveling through space with a speed of 1250 m/s relative to the Earth. A thruster fires for 2.4 min, exerting a continuous force of 20kN on the spacecraft in a direction opposite of the spacecraft’s motion. Calculate the initial momentum and the final momentum of the spacecraft.
2. A 47kg boy running at 3.2 m/s jumps onto a 2.5kg skateboard. Calculate the final velocity of the boy and the skateboard.
3. A 0.12kg billiard ball moving to the right at 1.5 m/s has a head on elastic collision with another ball of equal mass moving to the left at 0.86m/s. The first ball moves to the left at 0.86 m/s after the collision. Find the velocity of the second ball after the collision, and verify your answer by calculating the total KE before and after the collision.