**Physics 30 – Lesson 1**

**Momentum – Collisions in One Dimension**

Possible 100 / 69

**Practice problems**

1)

2)

3)

**Assignment**

1) Momentum is the product of mass and velocity, while inertia is the mass of an object.

/2

2)

/3

3)

/3

4)

/3

b.

a.

5)

/6

6)

/4

7)

/7

Elastic? Inelastic?

Compare total initial and total final kinetic energies.

8)

/4

9)

/4

10)

/4

11)

/4

12)

/4

13)

/4

14)

/4

15)

/4

16) Since the collision between the bullet and the pendulum is inelastic kinetic energy is not conserved. Therefore the problem must be solved in two parts:

a. the swing up → energy

b. the collision → momentum

65 mm

/9

\*17) Speeds are relative to water



 Boy

Bonus

/12

 Girl



\*18)

Bonus

 

\*19)

bonus

/10

