**Conservation of Momentum and Collisions Worksheet**

Name_____Date_____Period_____

Momentum=mass X velocity

Total Momentum Before Collision = Total Momentum After Collision

| momentum object 1 + | momentum object 2 | = | Momentum object 1 + | momentum object 2 |
|---|---|---|---|---|
| $m_1 v_1$ + | $m_2 v_2$ | = | $m_1 v_1$ + | $m_2 v_2$ |

1. You are given the following data about a golf club hitting a *stationary* golf ball:

| mass of club head | = | 0.350 kg |
|---|---|---|
| mass of golf ball | = | 0.046 kg |
| speed of club head before collision | = | 38 m/s |
| speed of club head after collision | = | 29 m/s |

Calculate the following: <u>SHOW WORK!!</u>

A. momentum of club head before collision

Answer=_____

B. momentum of club head after collision

Answer=_____

C. momentum of golf ball before collision

Answer=_____

D. momentum of golf ball after collision

Answer=_____

E. **Velocity** of the golf ball after it is hit by the golf club

Answer=_____