**Momentum Formula Sheet:**

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| **Impulse:** **Impulse Momentum Theorem:** | **Momentum:** **Change in Momentum:** |
| **Force-Time Graphs:** | **Impulse from a Variable Force:****Force-Time Graphs:** |
| **Newton’s 2nd Law in Terms of Momentum:** | **The Force exerted by a Fluid:****Mass Flow Rate:**  |
| **The Momentum Function:** | **Average Net Force:** |
| **Inelastic Collisions:**1. Momentum is conserved.
2. Kinetic energy is not conserved.

**Conservation of Momentum:****Final Velocity of Two Objects Sticking Together:** | **Elastic Collisions:**1. Momentum is conserved.
2. Kinetic energy is conserved.

**Conservation of Momentum:****Conservation of Kinetic Energy:** |

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| **Momentum Vectors:** | **Momentum Vector Formulas:** |
| **Center of Mass:** | **Recoil Velocity:** |
| **Elastic Collision – The Shortcut Formula:** | **Ballistic Pendulum - Initial Speed of the Bullet:****The Height of the Block:****Note:** These formulas apply online when the bullet remains embedded in the block. |
| **The Coefficient of Restitution:**1. Completely Inelastic Collision:
2. Inelastic Collision:
3. Elastic Collision:
 | **The Coefficient of Restitution:** |