**Projectile Motion Formula Sheet:**

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|  | **Vector Formulas:** |
| **Facts to Know**  **Derived Equations:**  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  **Initial Velocity:**  **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **Range Vs Time:** | **Height of the Cliff/Building:** |
| **Range:** |
| **Displacement:** |
| **Final Vertical Velocity:** |
| **Final Velocity:**  **Note**: *dy is negative when the projectile is falling. (g = +9.8)* |
| **Time to Reach the Ground:** |

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|  | **Point A:**  **Point B:**  **All Points:** |
| **Height:** | **Range:** |
| **Time of Flight:** | **Initial Angle:** |
| **Velocity Components:** | **Equation of Trajectory:**  **Note:** |
| **Initial Velocity:** | **Final Velocity:** |
| **Position:**  **Position Vector**: | **Displacement:** |

|  |  |
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|  | **Point A:**  **Point B:**  **All Points:** |
| **Height:** | **Range:** |
| **Time of Flight:**  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  **Equation of Trajectory:**  **Note:** | **Displacement:**  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  **Position:** |
| **Velocity Components:** | **Position Vector**: |
| **Initial Velocity:**  **Final Velocity:** | **Initial Angle:**  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  **Height of the Building:** |