

Projectile Motion Worksheet

Your email address (eevans01@ferrisisd.org) will be recorded when you submit this form. Not [eevans01](#)? [Sign out](#)

1. What is a projectile?

2. Since we know that velocity is a vector, and that vectors can be broken down into perpendicular components, we can think of a projectile's velocity as being in what two directions?

3. At what firing angle (and why) would you expect to obtain the maximum range for a projectile?

4. What angle (and why) would you expect to yield the maximum height?

5. In the absence of air resistance, why does the horizontal component of velocity for a projectile such as a bullet remain constant while the vertical component changes?

Maximum Height Calculations

Using the maximum height formula, calculate the maximum height at the given launch angles with a starting acceleration of 28m/sec

Maximum Height Formula

$((\text{Initial Velocity})^2 \times (\sin \text{ of Launch Angle})^2) / (2 \times \text{Acceleration of Gravity})$

6. Launch Angle of 35 degrees

7. Launch Angle of 40 degrees

8. Launch Angle of 45 degrees

9. Launch Angle of 50 degrees

10. Launch Angle of 58 degrees

11. Launch Angle of 75 degrees

12. Launch Angle of 82.5 degrees

13. Launch Angle of 90 degrees

Maximum Range Calculations

Using the maximum range formula, calculate the maximum range at the given launch angles with a starting acceleration of 28m/sec

Maximum Range Formula

$((\text{Initial Velocity})^2 \times (\sin \text{ of Launch Angle} \times 2)) / (\text{Acceleration of Gravity})$

14. **Launch Angle of 35 degrees**

15. **Launch Angle of 40 degrees**

16. **Launch Angle of 45 degrees**

17. **Launch Angle of 50 degrees**

18. **Launch Angle of 58 degrees**

19. **Launch Angle of 75 degrees**

20. **Launch Angle of 90 degrees**

Send me a copy of my responses.

Powered by

