

Projectiles Conceptual Review

1. Explain why the vertical velocity of a horizontally launched projectile is negative and increasing as it falls to the ground.
2. Explain how it is possible for a projectile launched at an angle above the horizontal to have a decreasing, but positive vertical velocity until it reaches the peak of its motion.
3. Why is the horizontal acceleration for all projectiles zero?
4. What direction is the vertical acceleration for all projectiles at any point during its path? Why is this true?
5. Explain how the direction of the velocity can be determined for any projectile at any point along its path.
6. An object is launched horizontally at the same time a second object is dropped from rest. Why do they hit the ground at the same time?
7. A projectile lands below its launch point. Why is the final vertical velocity greater than the initial vertical velocity?
8. A projectile launched at an angle lands at the same level it was launched from. The projectile has a positive vertical velocity for 2.0 seconds. How long does it have a negative vertical velocity? Explain your answer.
9. A projectile launched at an angle lands above the point it was launched from. The projectile has a positive vertical velocity for 2.0 seconds. What conclusion can we make about the time period that the projectile has a negative vertical velocity? Explain.
10. Why is the vertical velocity zero at the peak of a projectile's motion?

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