

MA104 - Differential Calculus

Lesson 40: Projectile Motion II

Review Questions

1. What is the difference between *velocity* and *speed*?
2. What is the relationship between position, velocity, and acceleration?
3. What is the vector equation for the position of a projectile fired from the origin? How would they change if we fired the projectile from somewhere else?

Problems

For each projectile motion problem, write down a vector equation for the position of the projectile. Then, at a minimum, write down your answer, as well as what computations (solving equations, etc) you did in Mathematica.

1. An athlete throws a shot at an angle of 45° from the horizontal and with an initial speed of 43 ft/sec. It leaves his hand 7 feet above the ground.
 - (a) Where does the shot land?
 - (b) How high does the shot go?
 - (c) What is the speed at impact?

