

Word Problems - Quadratic Equations

1. A ladder is leaning against an outer wall of a house. The distance between the base of the ladder to the wall is 5 feet. The distance from the top of the ladder to the ground is 1 foot less than the ladder's length. How long is the ladder?
2. Bert and Ernie begin biking from the same point at the same time. Bert travels north and Ernie travels east. After some time, they are 20 miles apart and Bert has traveled 4 miles more than Ernie. How far has each traveled from the starting point?
3. You own a fabulous rectangular swimming pool with dimensions 20 feet by 40 feet. You want to make a concrete walkway of uniform width around the pool. You can only afford enough concrete to cover 700 square feet. How wide can you make the walkway?
4. A ball is thrown upward at a speed of 64 feet/second. Its distance in feet from the ground at t seconds is given by the function $h(t) = -16t^2 + 64t$.
 - (a) How high is the ball at 2 seconds?
 - (b) At what time(s) will the ball be 32 feet from the ground (if any)?
 - (c) At what time does the ball land on the ground?

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