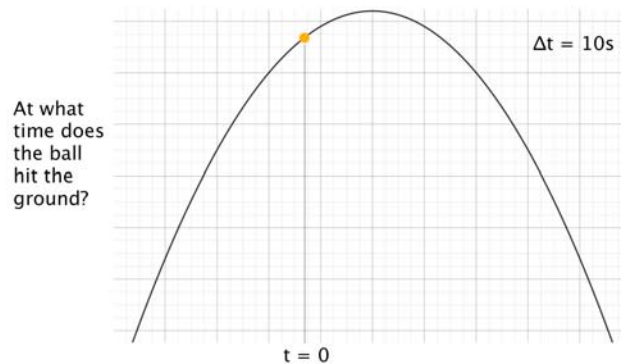# Question #364

Sometimes going back to the basics is a great way to ground your understanding (in any subject!), and so this week we travel back to 2-D kinematics land.

Below is pictured a trajectory of a ball in the air, with a small quirk: rather than defining the time of launch as t = 0, t = 0 is defined at when the ball reaches the point labeled in orange. This may be advantageous perhaps, if we wish to "sync" the event with some explosion somewhere else.

Δt refers to the total time of the trip, and Δy refers to the maximum height reached. Click on the image below to view the trajectory in more detail.

Question: From t = 0, how many seconds later will the ball hit the ground? (Hint: there *are* enough initial conditions specified to draw the trajectory of the ball.)

- (a) After > 5s.
- (b) After < 5s.
- (c) Other (you must explain).

While you may certainly calculate an answer using pencil and paper, remember: this is a *conceptual* question, and the answer can be arrived at quickly if thought about cleverly, rather than with brute strength. Click here for Answer #364 after March 1, 2010.

Question of the Week

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For questions and comments regarding the *Question of the Week* contact
Dr. Richard E. Berg by e-mail or using phone number or regular mail address

given on the [Lecture-Demonstration Home Page](#).

At what time does the ball hit the ground?

$\Delta t = 10s$

$t = 0$