Cal Poly Department of Mathematics

Puzzle of the Week

Nov 11 - ~~17~~ Dec 1, 2016

An unit mass object in the x, y-plane is at rest at the origin at time $t = 0$. It is acted on by two forces at all times: first a force of gravity pulls it down (negative y-axis direction) with a constant acceleration of magnitude $g > 0$; second a force with magnitude proportional to the object's speed, with proportionality constant $c > 0$, pushes in a direction that is at a 90^o counter-clockwise rotation from its direction of motion.

Where is the object at time $t = \frac{3\pi}{c}$? Can you describe the type of curve its trajectory sketches?

Solutions should be submitted to Morgan Sherman:

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Office: bldg 25 room 329

before the due date above. Those with correct and complete solutions will have their names listed on the puzzle's web site (see below) as well as in the next email announcement. Anybody associated to Cal Poly is welcome to make a submission.

http://www.calpoly.edu/~sherman1/puzzleoftheweek