

AP Free Response Problem of the Day
Monday, 16 April 2007

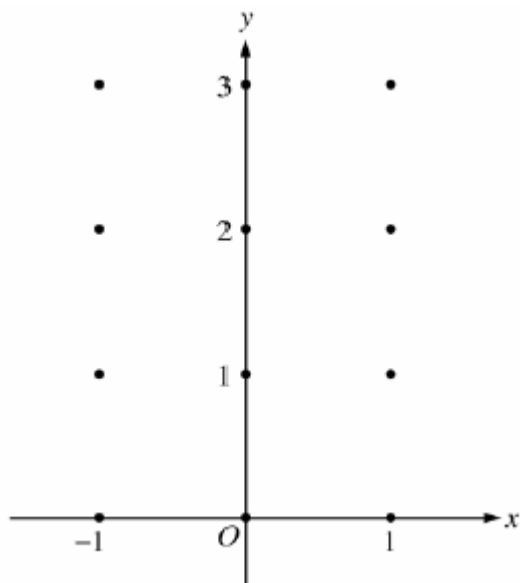
This question was found at:

http://apcentral.collegeboard.com/apc/public/repository/ap04_frq_calculus_ab_36107.pdf

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Consider the differential equation $\frac{dy}{dx} = x^4(y - 2)$.

- (a) On the axes provided, sketch a slope field for the given differential equation at the twelve points indicated.



- (b) While the slope field in part (a) is drawn at only twelve points, it is defined at every point in the xy -plane. Describe all points in the xy -plane for which the slopes are negative.
- (c) Find the particular solution $y = f(x)$ to the given differential equation with the initial condition $f(0) = 0$.