

Quiz 9, MTH 205, Fall 2014

Ayman Badawi

QUESTION 1. (i) Find the critical points of $y' = -y^2 - y + 12$ and classify each as stable, semi-stable, unstable. Then roughly sketch the solution graph if $y(0) = -7$

(ii) Let $A(t)$ be the amount of salt at any time t . A 100-gal tank initially holds 20 gallons of fresh water (i.e. $A(0) = 0$). A mixture containing 2 kg of salt per gallon is poured into the tank at the rate 8 gal/min, while the well stirred mixture leaves the tank at rate 4 gal/min. a) Find $A(t)$. b) Find the amount of salt at the moment of overflow?

Faculty information

Ayman Badawi, Department of Mathematics & Statistics, American University of Sharjah, P.O. Box 26666, Sharjah, United Arab Emirates.
E-mail: abadawi@aus.edu, www.ayman-badawi.com