

Course Title: Matrix, Linear Algebra & Differential Equation

Course code: MAT 2207

Assignment (Spring- 2024)

Q.1 Find the initial velocity of a particle which is fired in radial direction from the earth's centre and is supposed to escape from the earth. Assume that it is acted upon by the gravitational attraction of the earth only. Also find the velocity of escape from the earth.

Q.2 A tank initially contains 50 gallons of fresh water. Brine, containing 2 pounds per gallon of salt, flows into the tank at the rate of 2 gallons per minute and the mixture kept uniform by stirring, runs out at the same rate. How long will it take for the quantity of salt in the tank to increase from 40 to 80 pounds?