

Math 152 – Spring 2016 – In-class Group Assignment 17 – April 18, 2016.

At time $t=0$, a tank contains 5 kg of salt dissolved in 1000 liters of water. Assume that water containing .025 kg of salt per liter is entering the tank at a rate of 4 liters per minute and that a well-stirred solution is leaving the tank at the same rate (so the amount of liquid in the tank remains at 1000 liters).

- (a) Find a differential equation for $x(t)$ = kg of salt in the tank at time t minutes.
- (b) Solve this differential equation for $x(t)$
- (c) If you were to look at this tank after a very long time, what would be the concentration (in kg/l) of salt in the tank.