

Example : Let S represent the amount (pounds) of salt in a tank at time t (minutes). A solution containing 2 lbs. of salt per gallon flows into the tank at the rate of 3 gal./min., and the well-stirred mixture flows out at the rate of 5 gal./min. Assume that the tank initially holds 500 gallons of solution containing 25 lbs. of salt.

Q1 : In how many minutes will the tank be empty ?

Q2 : How much salt is in the tank after 10 minutes ? 100 minutes ? 200 minutes ? 240 minutes ?

Q3 : What is the maximum amount of salt in the tank ?