A Mixing Problem

A vat contains 60**L** of water with 5 **kg** of salt dissolved in it. A salt water solution that contains 2 **kg** of salt per liter enters the vat at a rate of 3 **L/min**. Pure water is also flowing into the vat at a rate of 2 **L/min**. The solution in the vat is kept well mixed and is drained at a rate of 5 **L/min**, so that the rate in is the same as the rate out. Thus there is always 60**L** of salt water at any given time. How much salt is in the vat after 30 minutes? What is the long term behavior of the system?