

Mixing Problem

- Consider a pond that has 10 million gallons of fresh water, initially. If $0.5 \frac{\text{million gallons}}{\text{year}}$ of carbon tetrachloride flow into the pond (BAD stuff!), at the same rate that the mixture flows out. Design a differential equation that shows how the total amount, Q , of CCl_4 as a function of time.
- If smoke from a cigarette is giving off 5μ g of smoke every second in a room with 100m^3 of air, what's the differential equation showing the concentration of smoke in the room?
- Same as before, but now add a crossbreeze moving 1m^3 of fresh air into the room and the same amount of air out of the room.
- Section 1.2 problem # 35.
- Section 1.2 problem # 38.