

Conditions

Sketch a graph that depicts the amount of water in a 50-gallon tank during the course of 17) the described pumping operations. The tank is initially full, and then a pump is used to take water out of the tank at a rate of 4 gallons per minute. The pump is turned off after 5 minutes. At that point, the pump is changed to one that will pump water into the tank. The change takes 2 minutes and the water level is unchanged during the switch. Then, water is pumped into the tank at a rate of 3 gallons per minute for 3 minutes.

Solution

We must construct functions which describe the amount of water depending on a time.

At first it will be $50-4t$, where t is a time in minutes, then it will be constant during 2 minutes, then $50+3t$.

