

(sec 4.1) System of ODEs as Models

(Ex) Tank T_1 and T_2 contain initially 200 gal of water each. In T_1 the water is pure, whereas 100 lb of fertilizer are dissolved in T_2 . By circulating liquid at a rate of 2 gal/min and stirring (to keep the mixture uniform), the amount of fertilizer $y_1(t)$ in T_1 and $y_2(t)$ in T_2 change with time t . How long should we let the liquid circulate so that T_1 will contain at least half as much fertilizer as there will be left in T_2 ? Set up a system of differential equations.

