Answer on Question #65478, Math / Algebra

Owners of a recreation area are filling a small pond with water. They are adding water at a rate of 30 liters per minute. There are 500 liters in the pond to start. Let W represent the amount of water in the pond (in liters), and let T represent the number of minutes that water has been added. Write an equation relating W to T, and then graph your equation.

Solution

We start at T = 0, when there are W_0 = 500 liters in the pond. The rate of adding water equals 30 liters per minute and is constant. Therefore we have the linear function W (T). The graph of this function is the straight line with slope $m = 30$ and y –intercept $b = 500$ (T ≥ 500). Write the linear equation using slope–intercept form: $W = mT + b$. We have our equation:

$$W = 30T + 500, T \geq 0$$

T, min	W, l
0	500
1	530