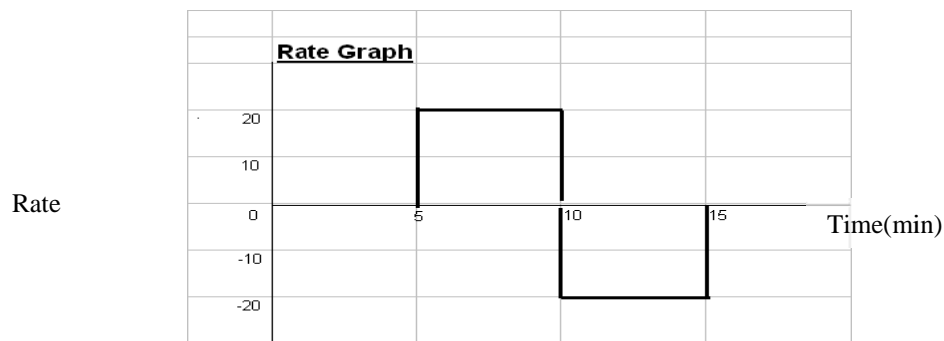


Step Functions

Step function takes the form of STEP (height, step time).Hint : Rate equation : $100 + \text{Step}(20,10)$ implies that the rate is equal to 100 units per week until the time is equal to 10, and then rate increases by 20 units per week to 120 units per week for the remainder of the time.

Draw the rate and stock graphs for the following where, R stands for Rate Equation and Initial Stock is 0.

1. $R = 5 + \text{Step}(-7,5)$ Hint : This equation can be explained as follows : The initial value of the rate from time=0 is 5, at time =5, the rate steps down by -7. Run the simulation for 10 minutes.
2. $R = \text{Step}(20,5) + \text{Step}(-40,10) + \text{Step}(20,15)$
3. $R = 10 + \text{Step}(-10, 4) + \text{Step}(10, 8) + \text{Step}(-10,12) + \text{Step}(10,16)$
The simulations runs for 20 minutes.
4. The following graph below contains the exogenous rate R as a function of time. The initial value of the level (stock) is zero (0) and the time horizon is 15 min.
 - i) Explain the behaviour of the rate mentioning the constant rates, steps and ramps and their occurrence. Provide the rate equation of the graph
 - ii) Explain and draw the values of the level (stock) of the graph.



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