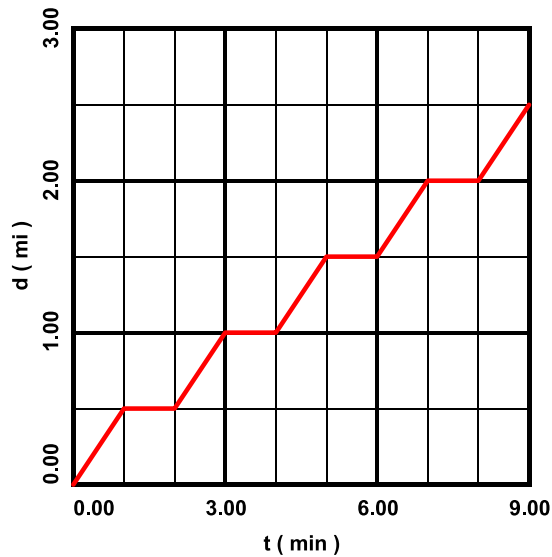


PRE-AP ALGEBRA 2

1B.3 CLASSWORK

- 1) The graph shows the distance  $d$ , in miles, as a function of time  $t$ , in minutes, during a 9-minute, 2.5-mile bus ride down Farnsworth Ave.



- a) During what time intervals is the bus moving? What is the speed of the bus (in both mi/min and mi/hr) during these times?
- b) During what time intervals is the bus stopped at a stop light? Justify your answer.
- c) Calculate the average rate of change of distance with respect to time (in both mi/min and mi/hr) over the time intervals
- i)  $0 \leq t \leq 1$  min
  - ii)  $0 \leq t \leq 2$  min
  - iii)  $0 \leq t \leq 3$  min
  - iv)  $0 \leq t \leq 9$  min

- 2) In 1950, the cost of electricity was \$0.32 per kW · hr. In 2020, electricity costed \$0.13 per kW · hr.
- a) Calculate the average rate of change of the cost of electricity with respect to time over that time interval.
- b) Assuming that the average rate of change is always valid:
- i) Estimate the cost of electricity in 2050.
  - ii) According to the model, in what year will electricity be free?