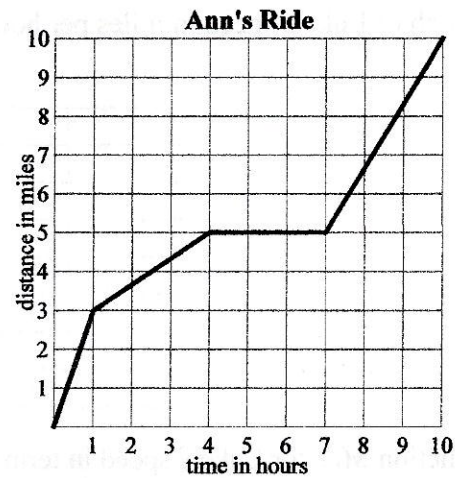


Applying Piecewise Functions

1. Ann went on a 10 hour bicycle trip. The graph models the relationship between the time and the total distance traveled by Ann. The table shows selected points on the graph.

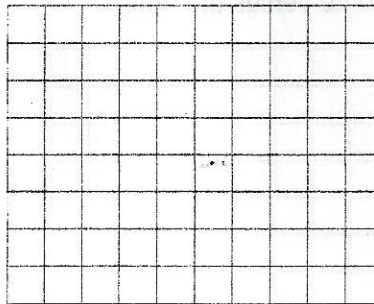
t	0	1	4	7	10
$d(t)$	0	3	5	5	10



- a. Write a function $d(t)$ for her total distance traveled in miles in terms of the time t in hours.

- b. Evaluate $d(3)$. Write an ordered pair to represent the situation and explain its meaning in context of the problem.

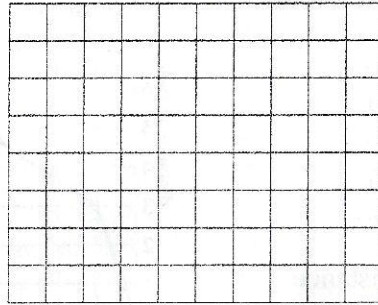
- c. Draw a graph of Ann's speed in miles per hour in terms of the time in hours.



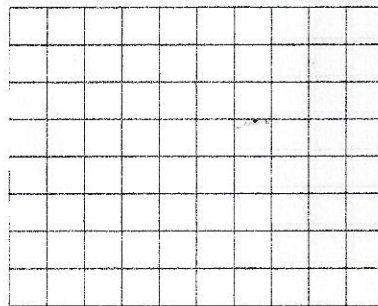
- d. What is the relationship between the speed and the equations for $d(t)$?

- e. Write a function $s(t)$ for her speed in terms of the time t .

2. Luke drives to his grandmother's house on Saturday. For the first three hours, he drives at a constant speed of 50 miles per hour. During the next three hours, Luke stops to eat and to buy his grandmother a birthday present. In the last four hours, Luke drives at a constant speed of 60 miles per hour.
- a. Draw a graph of Luke's speed in miles per hour in terms of the time in hours.



- b. Write a function $s(t)$ for Luke's speed in terms of the time t .
- c. What is the relationship between the speed and the equations for $d(t)$?
- d. Write a function $d(t)$ for his distance in miles from home in terms of the time t in hours.
- e. Draw a graph of his distance from home versus the time.



- f. Determine $d(2.3)$ and explain the meaning of the answer.
- g. Determine the value of t when $d(t) = 322$ and explain the meaning of the answer.