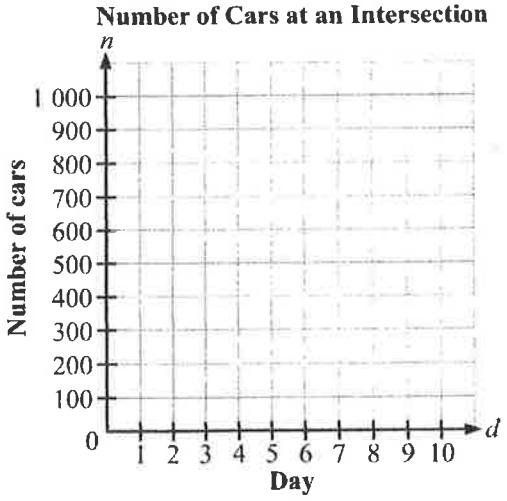
PRACTICE QUESTIONS

Use the following information to answer the next four questions.

A traffic control officer sets up a machine to record the number of cars passing a particular intersection for the seven days of a particular week. The results are shown in the following table.

Day	1	2	3	4	5	6	7
Number of cars	600	650	800	550	700	600	400

1. Place the data points on the grid provided to show the number of cars as dependent on the day of the week.



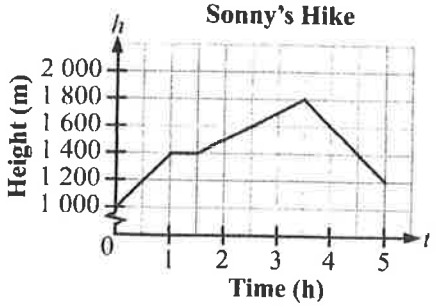
2. Is it appropriate to connect the data points? Why or why not?

3. Is the relation a function? Why or why not?

4. State the domain and range of the relation.

Use the following information to answer the next seven questions.

Sonny went for a hike. The graph shows his altitude for the duration of the hike.



5. Which variable is the independent variable?

6. Is the relation a function? Explain why or why not.

7. During which time period is Sonny climbing at the greatest rate, and what is that rate (in m/h)?

8. What might be happening between 1 and $1\frac{1}{2}$ hours?

9. At what time period(s) was Sonny at 1 700 m?

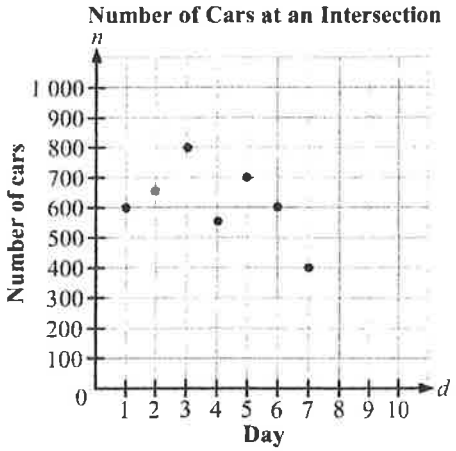
10. What is the domain of the relation?

11. What is the range of the relation, and what does it represent?

Practice Questions

ANSWERS AND SOLUTIONS

1.



2. The points cannot be connected because the data is discrete. Both the days of the week and the number of cars must be whole numbers.

3. The relation is a function because no two ordered pairs have the same first component.

4. Domain: {1, 2, 3, 4, 5, 6, 7}
Range: {400, 550, 600, 650, 700, 800}

5. The variable that takes on values of the domain is called the independent variable (the height depends on the time). The "Time" variable is the independent variable.

6. A vertical line drawn anywhere on the grid will touch the graph in at most one point. Therefore, the relation is a function.

7. During the first hour of his hike, Sonny is climbing at the greatest rate. His rate is
$\frac{1\,400 - 1\,000}{1} = 400\,\text{m/h}$.

8. The height is the same between 1 and $1\frac{1}{2}$ hours. Sonny is probably having a rest for one-half an hour.

9. Sonny was at 1 700 m at 3 hours and 3.75 hours.

10. If t represents the time, the domain is $0 \le t \le 5$.

11. The range represents the altitude (height) that Sonny is at during the course of his hike. If h represents the height, the range is $1\,000 \le h \le 1\,800$.