

1. Why might graphs and tables be preferred over other ways of representing a function?
- ① Graphs and tables help to show the domain and range of the function better than an equation.
2. For each situation, identify the two quantities that vary. Which is the independent variable? Which is the dependent variable?
- the amount of time spent studying and the grade earned on the test
 - the daily high temperatures in Texas for the month of August
 - the number of car accidents on a given interstate highway and the maximum speed limit
- ② a) variables: time & grade
 indep: time studying
 dep: grade earned
- b) variables: temp & day
 indep: day of August
 dep: daily high temp
- c) variables: # of accidents & speed limit
 indep: speed limit
 dep: # of accidents

For Exercises 3–5, state whether the table represents a function. Then explain why or why not.

3.

Day	Time Spent Hiking (hours)
1	3
2	1
3	2
4	3
5	2

yes

4.

x	y
1	7
-2	4
3	9
-4	-6
1	8

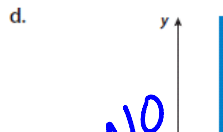
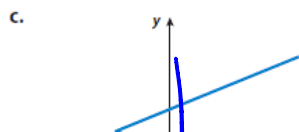
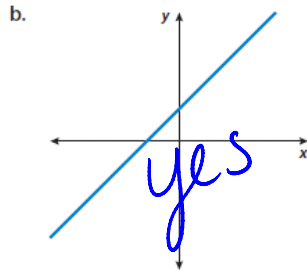
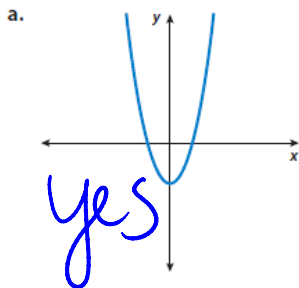
NO $1 \rightarrow 7$
 $1 \rightarrow 8$

5.

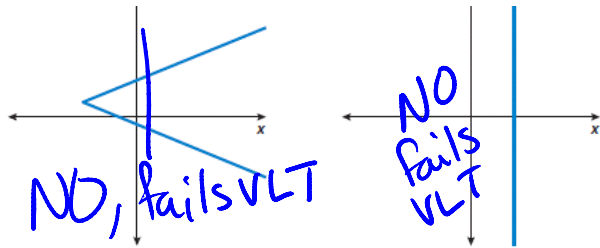
x	y
2	3
4	4
6	4
8	5
10	6

yes

For Parts (a–d), determine whether the graph represents a function. Explain why or why not.



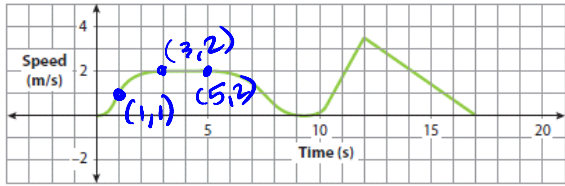
③ A vertical line crosses this graph at 2 pts for every x-value except the point at the far left.



graph at 2 pts for every x-value except the point at the far left.

(d) A vertical line will intersect this vertical line every where, so it fails the VLT.

For Exercises 7–11, use the graph below that shows the speed of a person as she walks up a hill and then sleds down.



7. Does this graph represent a function? Explain.
8. What is the domain of the function?
9. What is the range of the function?
10. Which of these points are on the graph?
A. (1, 1) ✓ B. (3, 2) ✓ C. (2, 1) ✗ D. (5, 2) ✓
11. Does the graph have any intercepts? If so, identify them and estimate their coordinates.

(7) yes it is a function. It passes the VLT at every x-value

(8) Domain: $0 \leq t \leq 17$ or $[0, 17]$

(9) Range: $0 \leq s \leq 3.5$ or $[0, 3.5]$

(10) A (1, 1), B (3, 2), D (5, 2)

(11) (0, 0), (17, 0), and from about (8.7, 0) to (9.9, 0)

12. Examine the verbal description, the table, and the graph shown below.

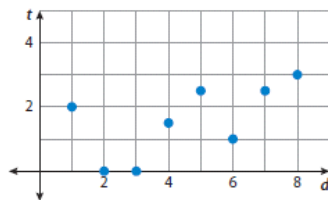
Verbal Description

On Thursday, a student studied 2 hours. On Friday and Saturday, he did not study. On Sunday through Thursday, he studied 1.5, 2.5, 1.0, 2.5, and 3.0 hours, respectively.

Table

Day	Time (hr)
1	2.0
2	0
3	0
4	1.5
5	2.5
6	1.0
7	2.5
8	3.0

Graph



- a. Does the table represent a function? Explain why or why not.
- b. State the domain and range of the function shown in the graph.
- c. Do all three of these representations represent the same function? Explain.

(12) a) yes, the table is a function because all inputs match with exactly one output.

b) Domain $\{1, 2, 3, 4, 5, 6, 7, 8\}$

Range $\{0, 1, 1.5, 2, 2.5, 3\}$

c) Yes all representations represent the same function between the domain and range

13. Consider the function $y = \frac{1}{x}$.
 - a. Is the point (2, -2) on the graph of the function?
 - b. Determine the value of y when $x = 4$.
 - c. What is the domain of this function?

(13) a) $-2 = \frac{1}{2}$ ✗ (2, -2) isn't on the graph of $y = \frac{1}{x}$

b) $y(4) = \frac{1}{4}$

c) $\mathbb{R}; x \neq 0$. or $(-\infty, 0) \cup (0, \infty)$