

Exercises - 4.3

In Exercises 1 to 8, determine which of the relations are also functions.

1. $\{(1, 6), (2, 8), (3, 9)\}$
2. $\{(2, 3), (3, 4), (5, 9)\}$
3. $\{(-1, 4), (-2, 5), (-3, 7)\}$
4. $\{(-2, 1), (-3, 4), (-4, 6)\}$
5. $\{(1, 3), (1, 2), (1, 1)\}$
6. $\{(2, 4), (2, 5), (3, 6)\}$
7. $\{(-1, 1), (2, 1), (2, 3)\}$
8. $\{(2, -1), (3, 4), (3, -1)\}$

In Exercises 9 to 14, decide whether the relation is a function in each table of values.

9.	x	y
	3	1
	-2	4
	5	3
	-7	4

10.	x	y
	-2	3
	1	4
	5	6
	2	-1

11.	x	y
	2	3
	4	2
	2	-5
	-6	-3

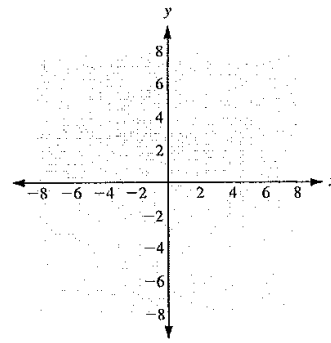
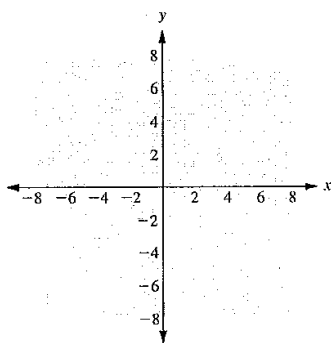
12.	x	y
	1	5
	3	-6
	1	-5
	-2	-9

13.	x	y
	-1	2
	3	6
	6	2
	-9	4

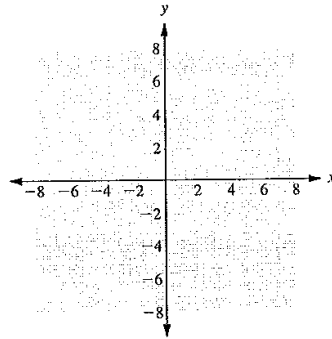
14.	x	y
	4	-6
	2	3
	-7	1
	-3	-6

In Exercises 15 to 20, for each set of ordered pairs, plot the related points. Then use the vertical line test to determine which sets are functions.

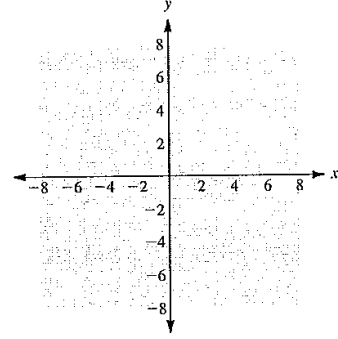
15. $\{(-3, 1), (-1, 2), (-2, 3), (1, 4)\}$
16. $\{(2, 2), (1, 1), (3, 3), (4, 5)\}$



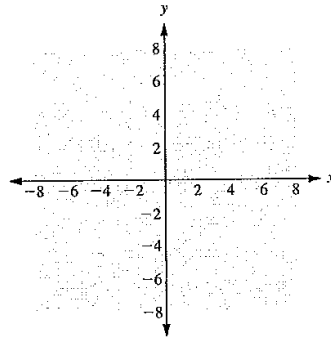
17. $\{(-1, 1), (2, 2), (3, 4), (5, 6)\}$



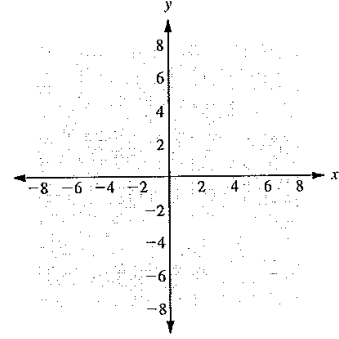
18. $\{(1, 4), (-1, 5), (0, 2), (2, 3)\}$



19. $\{(1, 2), (1, 3), (2, 1), (3, 1)\}$

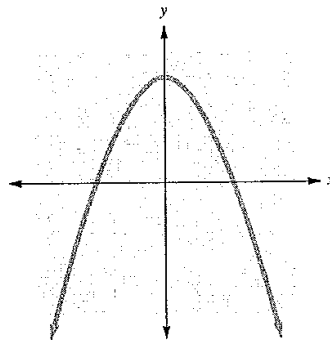


20. $\{(-1, 1), (3, 4), (-1, 2), (5, 3)\}$

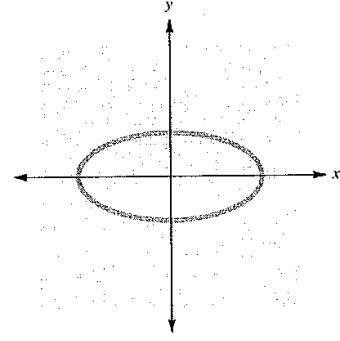


For Exercises 21 to 28, use the vertical line test to determine whether the graphs represent a function.

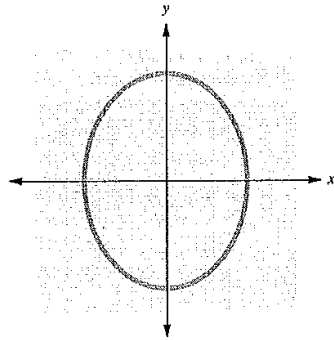
21.



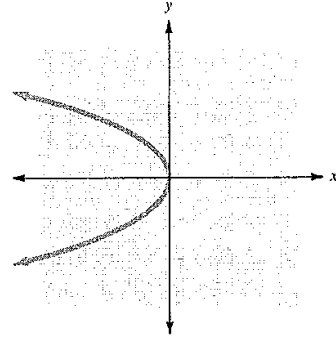
22.



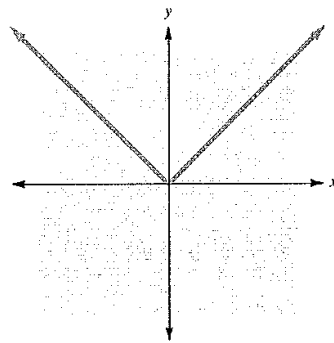
23.



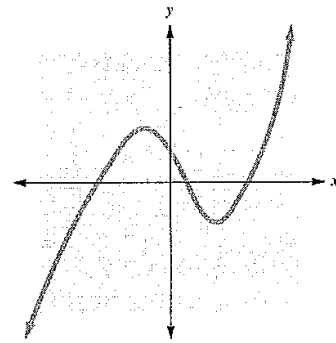
24.



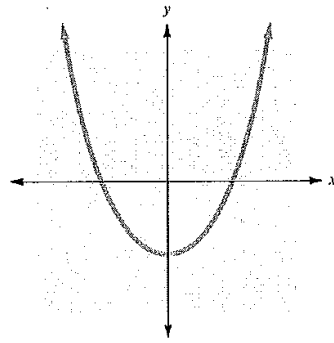
25.



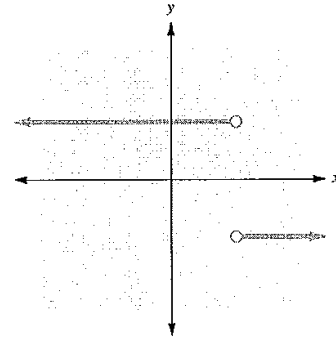
26.



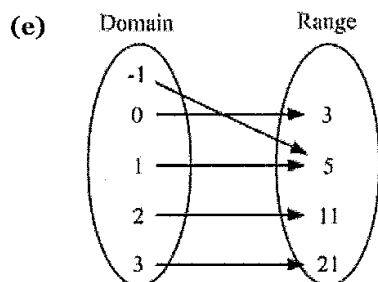
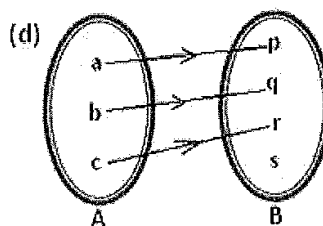
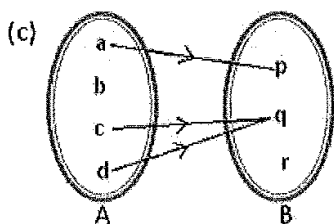
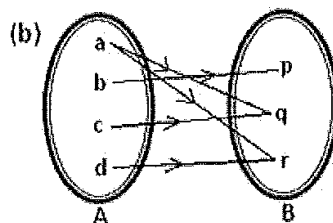
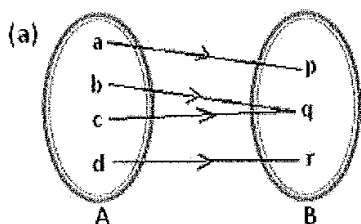
27.



28.



29. Determine which are functions and which are not. Give reason as to why any is NOT a function:



- a. _____
- b. _____
- c. _____
- d. _____
- e. _____