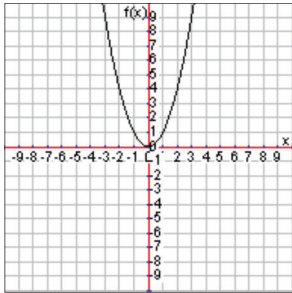


Lesson 1.1

Determine if each of the following is a true function or not and explain how you know. If it is a true function, give the domain and range.

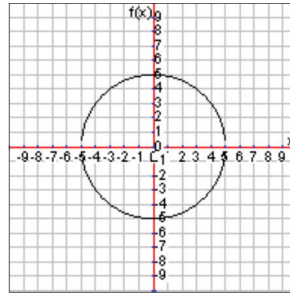
1. $y = x^2$

x	-2	-1	0	1	2
y	4	1	0	1	4



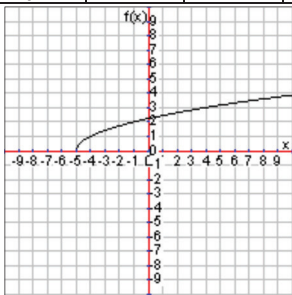
2. $x^2 + y^2 = 25$

x	-4	-3	0	3	4
y	± 3	± 4	± 5	± 4	± 3



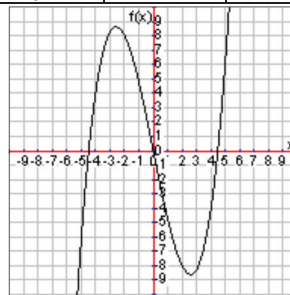
3. $y = \sqrt{x+5}$

x	-5	-4	-1	4	11
y	0	1	2	3	4



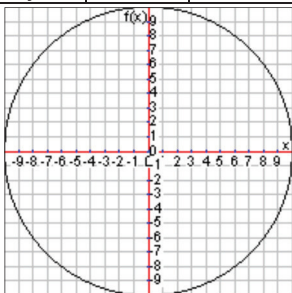
4. $y = \frac{1}{4}x^3 - 5x$

x	-4	-2	0	2	4
y	4	8	0	-8	-4



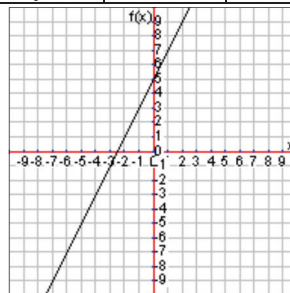
5. $x^2 + y^2 = 100$

x	-8	-6	0	6	8
y	± 6	± 8	± 10	± 8	± 6



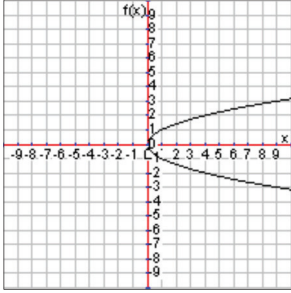
6. $y = 2x + 5$

x	-2	-1	0	1	2
y	1	3	5	7	9



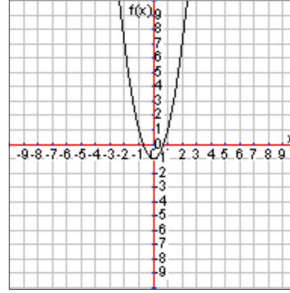
7. $x = y^2$

x	0	1	4	9	25
y	0	± 1	± 2	± 3	± 5



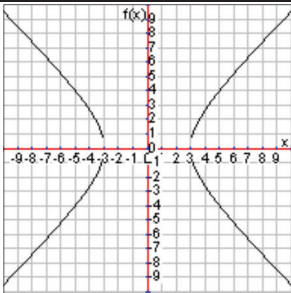
8. $y = 2x^2 - 1$

x	-2	-1	0	1	2
y	7	1	-1	1	7



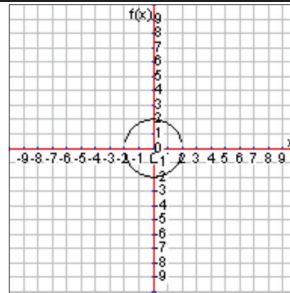
9. $x^2 - y^2 = 9$

x	-5	-3	3	5
y	± 4	0	0	± 4



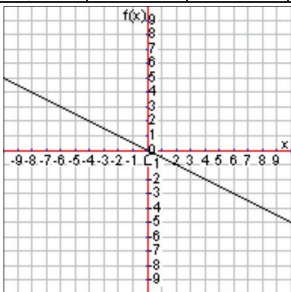
10. $\frac{x^2}{4} + \frac{y^2}{4} = 1$

x	-2	0	2
y	0	± 4	0



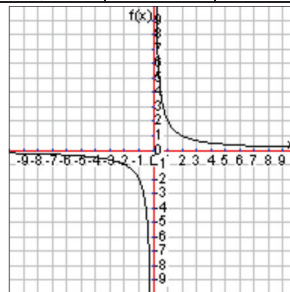
11. $y = -\frac{1}{2}x$

x	-4	-2	0	2	4
y	2	1	0	-1	-2



12. $y = \frac{2}{x}$

x	-2	-1	1	2
y	-1	-2	2	1



13. Explain how to determine whether or not an equation models a function.

14. Explain how to determine whether or not a table models a function.

Determine if the following descriptions of relationships represent true functions and explain why they do or why they do not. If it is a true function give a description of the domain and range.

15. Input: Time elapsed, Output: Distance run around the track.

16. Input: Store's name, Output: Number of letters in the name.

17. Input: Person's age, Output: Yearly salary.

18. Input: Amount of food eaten, Output: A dog's weight.

19. Input: Person's name/identity, Output: That person's birthday.

20. Input: Person's age, Output: Height.

21. Input: Name of a food, Output: Classification of that food (such as meat, dairy, grain, fruit, vegetable).

22. Input: Time studied for test, Output: Test score.

Determine if the following sequences represent true functions and explain why they do or why they do not. If it is a true function give a description of the apparent domain and range.

23. 0,1,2,3,4,5 ...

24. 0, 1 or 0, 1 or 2, 3, 4, 5 ...

25. 0,1,0,1,0,1 ...

26. 1,1,1,1,1,1 ...

27. 0 or 1, 0 or 1, 0 or 1, 0 or 1, 0 or 1, 0 or 1 ...

28. 0,1,1,2,3,5 ...

29. 1,2,4,8,16,32 ...

30. 1,3,5,7,9,11 ...

Evaluate the given functions at the given inputs.

$$f(x) = x^2 + 2$$

$$h(t) = \frac{1}{4}t - 3$$

$$v(s) = s^3$$

31. $f(-2)$

32. $f(10)$

33. $f(-3)$

34. $f(0)$

35. $h(-2)$

36. $h(-8)$

37. $h(4)$

38. $h(0)$

39. $v(2)$

40. $v(-2)$

41. $v(4)$

42. $v(1)$