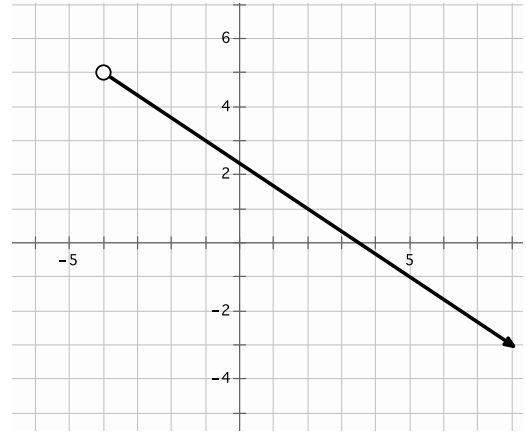Name: _Mikey_

Use the graph to the right to answer the following questions.
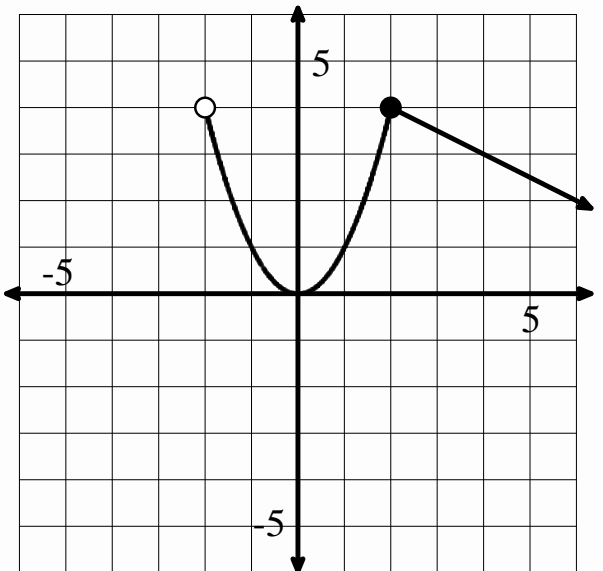
1. What is the domain of the function? $(-4, \infty)$

2. What is the range of the function? $(-\infty, 5)$

3. Is there a defined minimum? NO

4. Is there a defined maximum? NO

5. Is the function increasing, (decreasing,) constant? Over what intervals? $(-4, \infty)$

6. Is the function (continuous,) discrete, or not continuous?

7. What are the x and y-intercepts? $(0, 2.5)$ $(3.5, 0)$

8. Where is f(x) ≤ 0? $[3.5, \infty)$ 9. Where is f(x) > 1? $(-4, 2)$

←$(-4,5)$ not on graph

10. f(x) = 1, x = __2__   11. f(5) = __-1__   12. f(x) = 5, x = __no value__

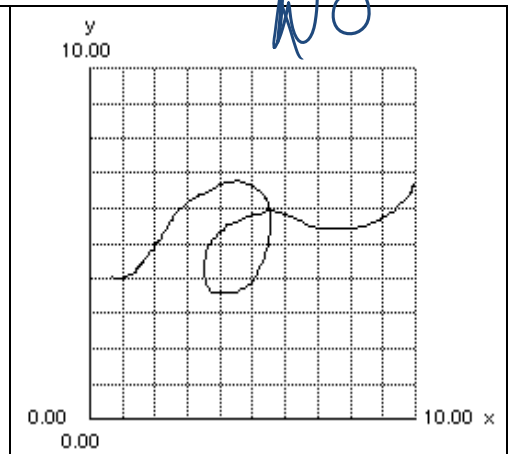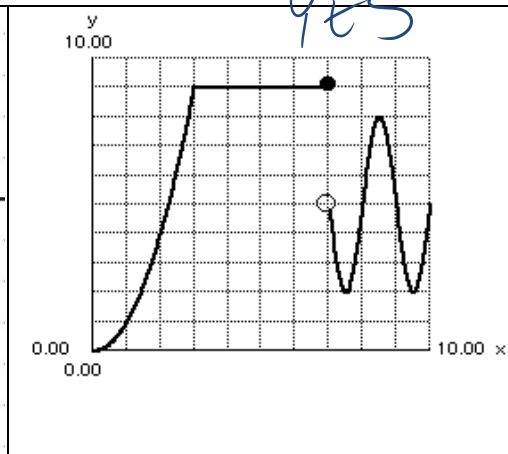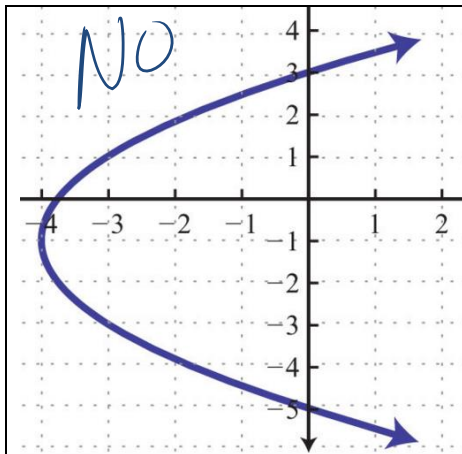*Use the graph to the right to answer the following questions.*

13. What is the domain? $(-2, \infty)$

14. What is the range? $(-\infty, 4]$
~ not 0

15. Is there a defined minimum? No

16. Is there a defined maximum? yes: 4

17. Is the function increasing, decreasing, constant?
       yes   yes   no
    Over what intervals?
    Inc: $(0, 2)$ Decr: $(-2, 0)$ and $(2, \infty)$

18. Which of the following is *not* a typical feature of a function?
    a. Domain   b. Where the function is increasing

    c. The scale of the graph   d. The maximum value
         ↑ how we display the function,
            but not part of the function

19. Which of the following are functions?

NO	**YES**	**NO**

YES

Time (s)	Height (m)
0	7
2	10
4	5
6	0
7	0
8	3

NO

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

NO

x	y
1	0
3	4
5	8
7	12
7	16

Use the discrete table to the right to answer the following questions.

20. What is the domain? $\{0, 2, 4, 6, 7, 8\}$

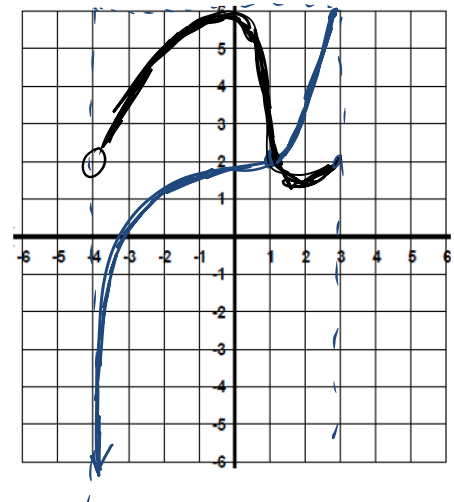21. What is the range? $\{0, 3, 5, 7, 10\}$

Time (s)	Height (m)
0	7
2	10
4	5
6	0
7	0
8	3

Sketch a graph of a function with the following features.

- Domain of (-4, 3]
- Maximum of 6
- f(1) = 2

Two are shown

(Infinitely many possible correct answers)

Describe all features of the functions below from the following:
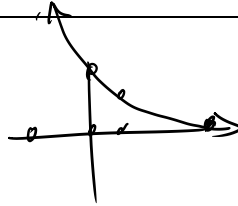*Domain, range, minimum, maximum, increasing, decreasing.*
Use interval notation when necessary. Try making a different representation of the equation if you are getting stuck.

f(x) = 4x - 2

Domain	Range	Minimum
$(-\infty, \infty)$	$(-\infty, \infty)$	none
Maximum	Increasing	Decreasing
none	$(-\infty, \infty)$	never

x	g(x)
0	8
1	4
5	$\frac{1}{16}$

x	g(x)
-3	64
-1	16

g(x)=8(0.5)ˣ

Domain	Range	Minimum
$(-\infty, \infty)$	$(0, \infty)$	none
Maximum	Increasing	Decreasing
none	not	$(-\infty, \infty)$

x	h(x)
1	3
2	12
-1	

x	h(x)
0	0

h(x) = 3x²

Domain	Range	Minimum
$(-\infty, \infty)$	$[0, \infty)$	0
Maximum	Increasing	Decreasing
no	$(0, \infty)$	$(-\infty, 0)$

j(x) = -5

Domain	Range	Minimum
$(-\infty, \infty)$	$\{-5\}$	-5
Maximum	Increasing	Decreasing
-5	never	never