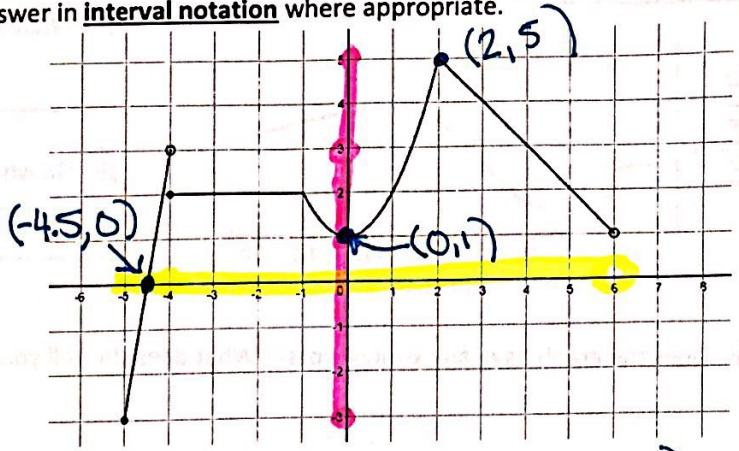


Math 1 Features of Functions WS

Name: _____

Use the graph below to answer questions #1 – 6. Answer in interval notation where appropriate.

1. What is the domain? $[-5, 6)$
2. What is the range? $[-3, 5]$
3. What is the maximum value of the function?
5
4. At what x-value does the maximum value occur?
 $x=2$
5. Identify the y-intercept(s) $(0, 1)$



6. Identify the x-intercept(x) $(-4.5, 0)$

The table below represents a continuous function defined on the interval $[0, 12]$. Use the table to answer questions #7-8. Answer in interval notation where appropriate.

x	0	2	4	6	8	10	12
$f(x)$	15	9	5	7	10	13	9

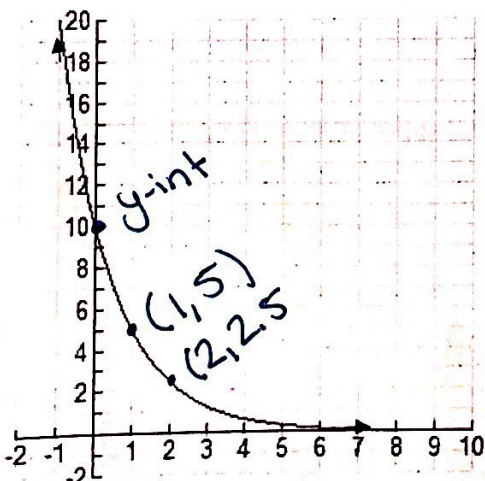
7. What is the range of the function? $[5, 15]$ min
8. Identify the minimum value and where it is located. 5 @ $x=4$

The table below represents a continuous function defined on the interval $[0, 10]$. Use the table to answer questions #9-10. Answer in interval notation where appropriate.

x	0	1	2	4	6	7	8	9	10
$F(x)$	11	12	13	9	8	7	6	10	11

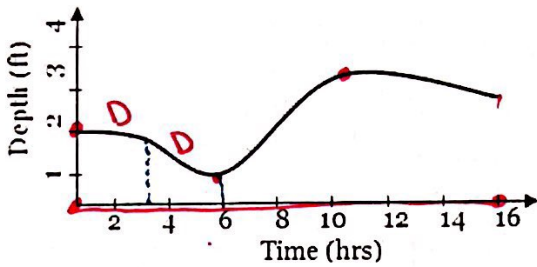
9. What is the range of the function? $[6, 13]$
10. Identify the maximum value and where it is located. 13 @ $x=2$

The function $f(x) = 10\left(\frac{1}{2}\right)^x$ is graphed below. Use it to answer questions #11-13



11. What is the domain? $(-\infty, +\infty)$
12. Identify the y-intercept. $(0, 10)$
13. List 3 additional points on the graph of the function.
 $(-1, 20)$ $(1, 5)$ $(2, 2.5)$

The graph below shows the depth of water in a leaky swimming pool. Use it to answer questions #14 – 17. Answer in interval notation where appropriate.



14. What is the domain of the function?

$[0, 16]$

15. On what intervals is the depth decreasing?

between 2 and 6 hours

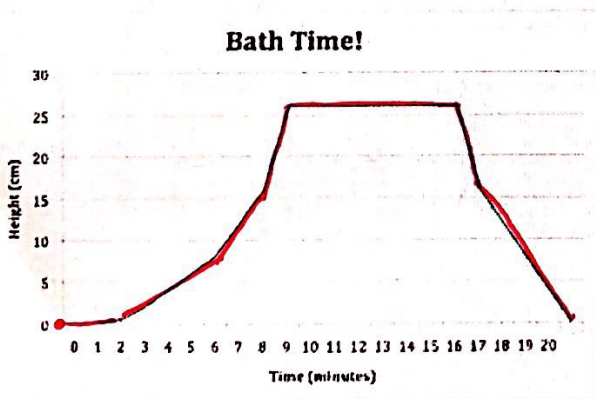
16. Does the graph have any x-intercepts? What does this tell you about the depth of water in the pool?

No It never completely empties

17. Write a story that describes what is happening. Be sure to include what is happening in the story and math vocabulary words that tell what you are seeing on the graph.

The depth of the pool starts at 2ft and it decreases slowly and then faster. Between 5 and 6 ^{hrs} minutes the water reaches its minimum of one foot. It gets refilled and the water increases to its max level of 3ft at 10 hours. It then slowly decreases to 2.5 feet.

The graph below shows the height of water in the bath tub. Use it to answer questions #18-21. Answer in interval notation where appropriate.



18. What is the range of the function?

$[0, 26]$

19. On what intervals is the function increasing?

between 0 and 9 minutes

20. Does the graph have any x-intercepts? What do the x-intercepts represent in the story?

Yes The bathtub is empty.

21. Write a story that describes what is happening. Be sure to include what is happening in the story and math vocabulary words that tell what you are seeing on the graph.

Tiger needs a bath, so Ms. Mendoza starts filling the tub. The water increases slowly and then at a faster and faster rate until 9 minutes. The water reaches its maximum of 26 cm at 9 min. The height of the water remains constant from 9 min - 17 min while Tiger gets clean. Tiger gets out of the tub and Ms. Mendoza drains the water quickly and then more slowly until the minimum of 0 ft at 21 min.