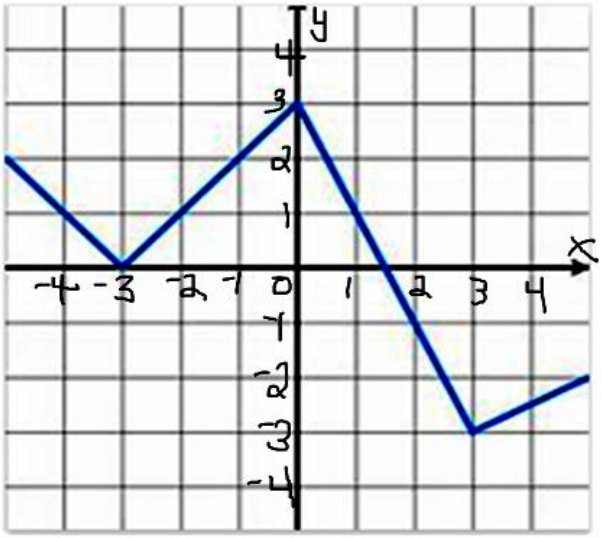
Unit 3 Review Sheet Name: _____

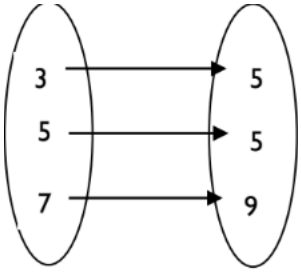
I. Identify the key features for the function provided.



1. What is the domain of the function? _____
2. What is the range of the function? _____
3. Where is the function increasing? _____
4. Where is the function decreasing? _____
5. Where is the function constant? _____
6. What is the maximum of the function? _____
7. What is the minimum of the function? _____
8. What is the x-intercept? _____
9. What is the y-intercept? _____
10. Does the graph represent a function? _____
11. What is $f(2)$? _____
12. $f(x) = -3$ for what value of x? _____
13. What is $f(0)$? _____
14. $f(x) = 1$ for what value(s) of x? _____

II. Determine whether each is a function or just a relation by writing "function" or "relation only" underneath each.

15.



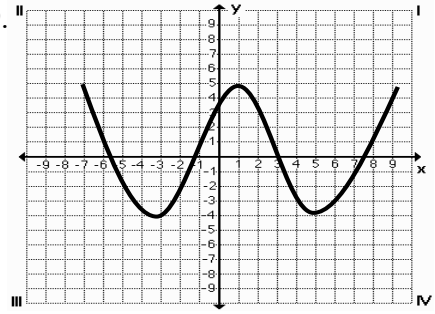
16.

x	1	2	3	4
$f(x)$	3	12	48	192

17.

18. $\{(-3,1),(0,6),(-3,2),(5,-1)\}$

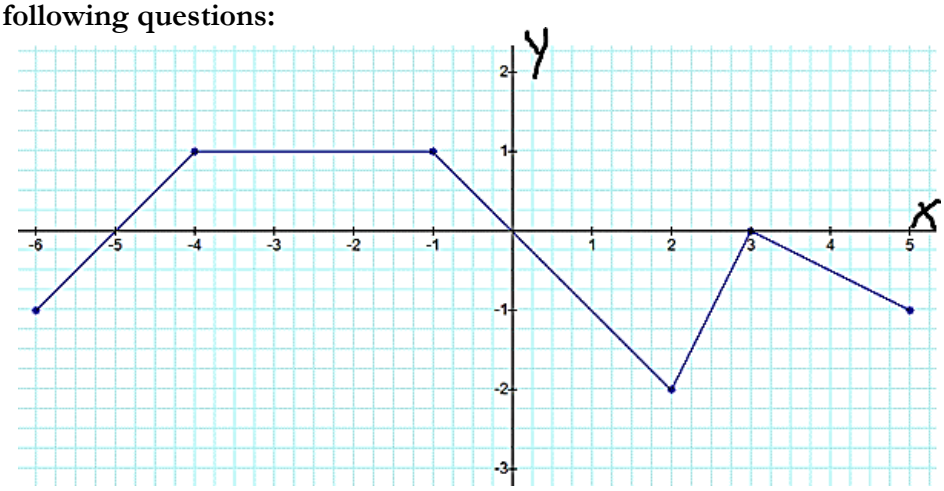
19.



20.

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

III. Using the graph provided to answer the following questions:



21. $f(4) =$ _____

22. $f(-4) =$ _____

23. $f(1) =$ _____

24. $f(0) =$ _____

25. $f(-3) =$ _____

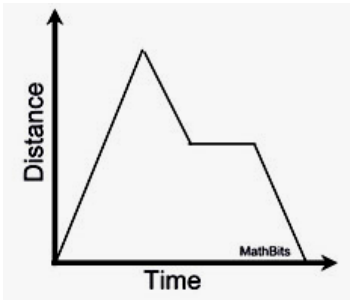
26. If $f(x) = -2$ then x = _____

27. If $f(x) = 0.5$ then x = _____ _____

28. If $f(x) = -1$ then x = _____ _____ _____ _____

IV. Story Problems

29. **Multiple Choice: Which story could match the graph shown at the right?**



A. Starting from home, Kyle jogs increasing his speed until he gets a cramp. He then slows his pace, begins walking, and returns home.

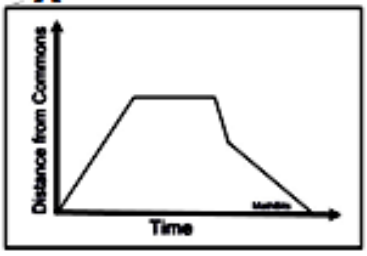
B. Starting from home, Kyle rides his motorcycle to the lake, and stops for a swim before returning home.

C. Starting from home, Kyle rides his motorcycle to the lake, then turns around and returns home, stopping for gas on the return trip.

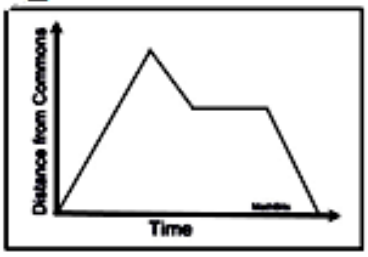
D. Starting from home, Kyle rides his bike up a steep hill, and then rides down a hill. He crosses a bridge before he returns home.

30. **Multiple Choice: Which graph below could represent the story:** Alison walked from her school's Commons area to her Math class. After class, she walked back to the Commons area, stopping to get a candy bar from a vending machine on the way.

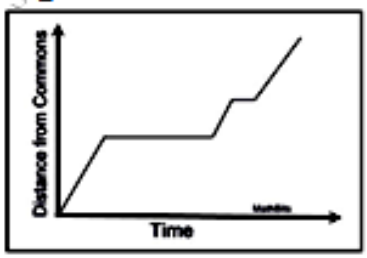
A



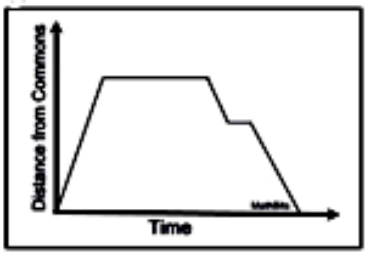
B



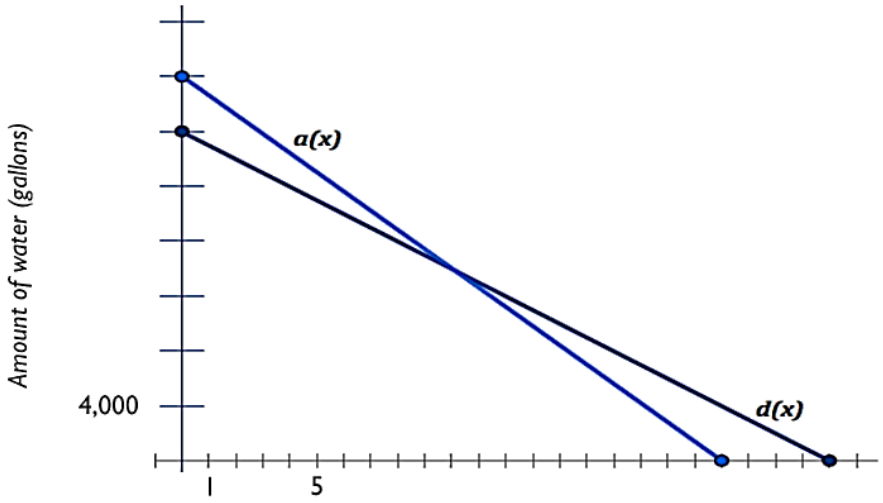
C



D



V. Intersecting Graphs



31. Where is $a(x) = d(x)$

32. On what interval is $a(x) > d(x)$?

33. On what interval is $a(x) < d(x)$?

34. What is $a(0) + d(0)$?

35. Write the equation for $a(x)$.

36. Write the equation for $d(x)$.

37. If $g(x) = a(x) + d(x)$, write the equation for $g(x)$.

VI. Average Rate of Change

38. **Multiple Choice**: The table below shows the average weight of a type of plankton after several weeks. What is the average rate of change in weight of the plankton form week 8 to week 12?

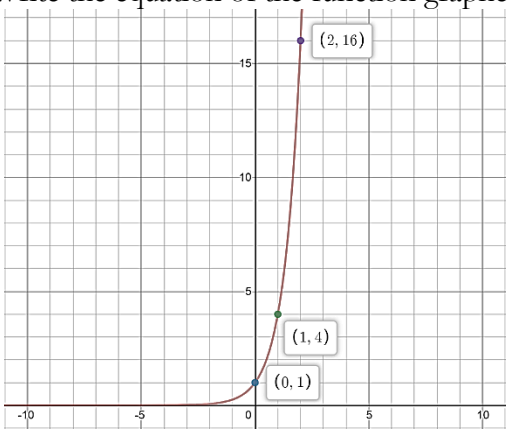
A. 0.0265 ounces per week
B. 0.0375 ounces per week
C. 0.055 ounces per week
D. 0.1125 ounces per week

Time(weeks)	Weight (ounces)
8	0.04
9	0.07
10	0.14
11	0.25
12	0.49

VI. RSG Review

39. Find the point of intersection for $f(x)$ and $g(x)$ if $f(x) = -x + 4$ and $g(x) = x + 6$.

40. Write the equation of the function graphed to the below:



41. If $f(x) = 2x - 3$, then $f(4) =$ _____

42. If $f(x) = 2x - 3$, then $f(-1) =$ _____