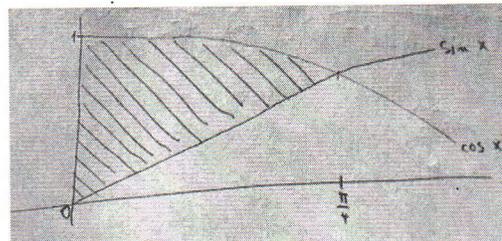


SECONDARY MATH I // MODULE 3  
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3.2/3.3  
CW #6

## Interpreting Functions

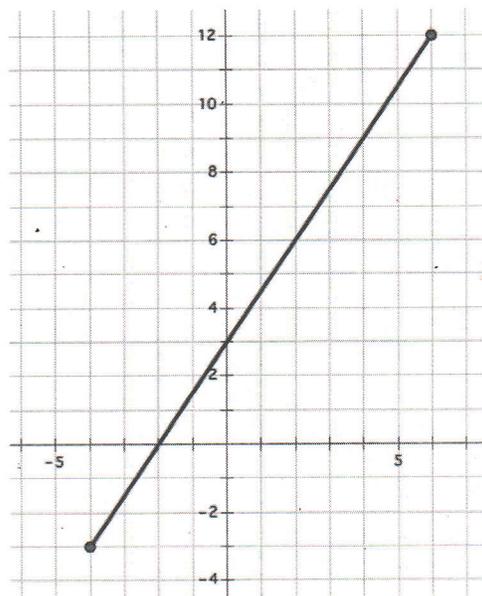
### A Practice Understanding Task



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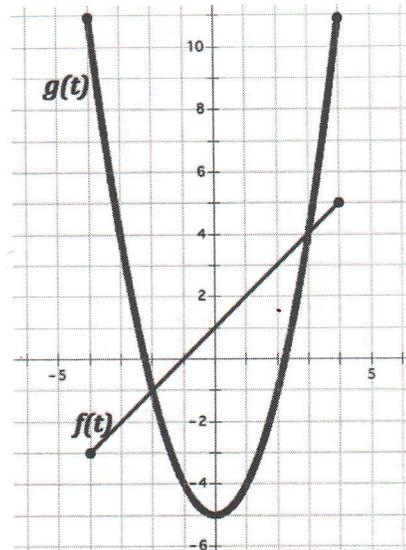
Given the graph of  $f(x)$ , answer the following questions. Unless otherwise specified, restrict the domain of the function to what you see in the graph below. Approximations are appropriate answers.

1. What is  $f(2)$ ?
2. For what values, if any, does  $f(x) = 3$ ?
3. What is the x-intercept?
4. What is the domain of  $f(x)$ ?
5. On what intervals is  $f(x) > 0$ ?
6. On what intervals is  $f(x)$  increasing?
7. On what intervals is  $f(x)$  decreasing?
8. For what values, if any, is  $f(x) > 3$ ?



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Consider the linear graph of  $f(t)$  and the nonlinear graph of  $g(t)$  to answer questions 9-14. Approximations are appropriate answers.



9. Where is  $f(t) = g(t)$ ?
10. Where is  $f(t) > g(t)$ ?
11. What is  $f(0) + g(0)$ ?
12. What is  $f(-1) + g(-1)$ ?
13. Which is greater:  $f(0)$  or  $g(-3)$ ?
14. Graph:  $f(t) + g(t)$  from  $[-1, 3]$

The following table of values represents two continuous functions,  $f(x)$  and  $g(x)$ . Use the table to answer the following questions:

$x$	$f(x)$	$g(x)$
-5	44	-13
-4	30	-9
-3	20	-5
-2	12	-1
-1	6	3
0	2	7
1	0	11
2	0	15
3	2	19
4	6	23
5	12	27
6	20	31

15. What is  $g(-3)$ ?
16. For what value(s) is  $f(x) = 0$ ?
17. For what values does  $f(x)$  seem to be increasing?
18. On what interval is  $g(x) > f(x)$ ?
19. Which function is changing faster in the interval  $[-5, -1]$ ? Why?

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Use the following relationships to answer the questions below.

$$h(x) = 2^x$$

$$f(x) = 3x - 2$$

$$g(x) = 8$$

$$x = 4$$

$$y = 5x + 1$$

20. Which of the above relations are functions? Explain.
21. Find  $f(2)$ ,  $g(2)$ , and  $h(2)$ .
22. Write the equation for  $g(x) + h(x)$ .
23. Where is  $g(x) < h(x)$  ?
24. Where is  $f(x)$  increasing?
25. Which of the above functions has the fastest growth rate?

Create a graph for each of the following functions, using the given conditions

26. This function has the following features:  $f(2)$  is positive;  $f(-2) = 0$ ,  $f(x)$  is always increasing and has a domain of All Real Numbers.
27. This function has the following features:  $f(3) > f(6)$ ;  $f(1) = 0$ ;  $f(2) = 4$ ;  $f(x)$  is increasing from  $[-5, 3]$ ; has a domain from  $[-5, 10]$
28. This function has the following features:  $f(x)$  has a constant rate of change;  $f(5) = 0$
29. Create your own conditions- have at least three and then create examples where the solution could be different graphs.