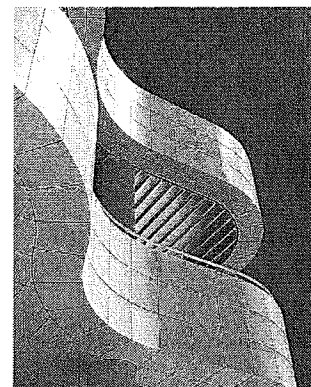# 5.6 Interpreting Functions
*A Practice Understanding Task*

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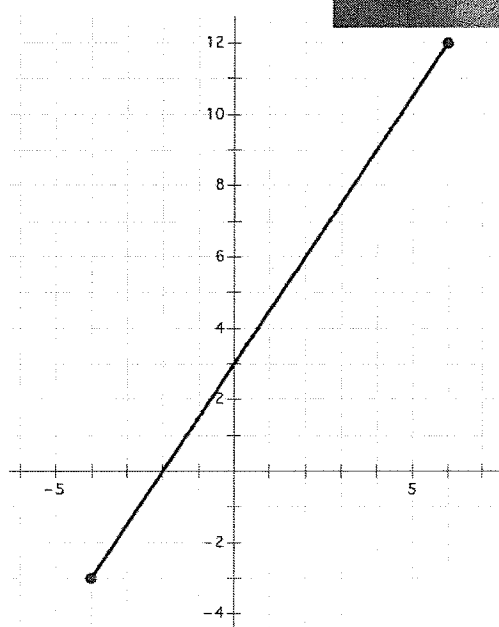
Consider the linear graph of *f(t)* and the nonlinear graph of *g(t)* to answer questions 9-14. Approximations are appropriate answers.

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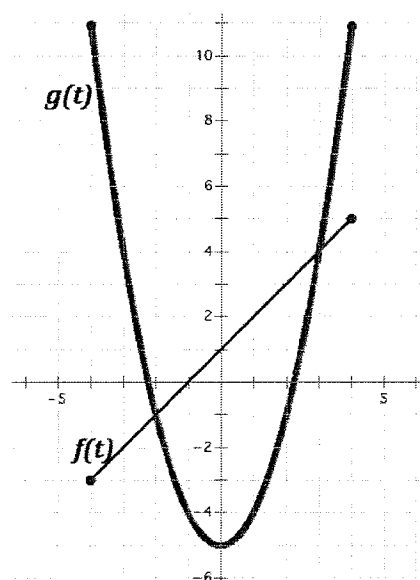
The following table of values represents two continuous functions, *f(x) and g(x)*. Use the table to answer the following questions:

| x | f(x) | g(x) |
|---|------|------|
| -5 | 42 | -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 is $f(x)$ increasing?

18.    On what interval is $g(x) > f(x)$

19.    Which function is changing faster in the interval $[-5, 0]$? Why?

Use the following relationships to answer the questions below.

$$h(x) = 2^x \qquad f(x) = 3x - 2 \qquad g(x) = 5 \qquad x = 4 \qquad y = 5x + 1$$

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?