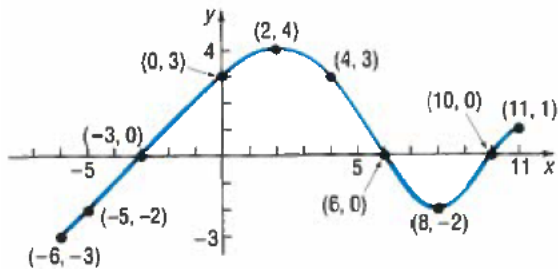


Build your own dreams, or somebody else will hire you to build theirs. – Farrah Gray

Use the graph of the given function f to answer Questions 1 – 11.

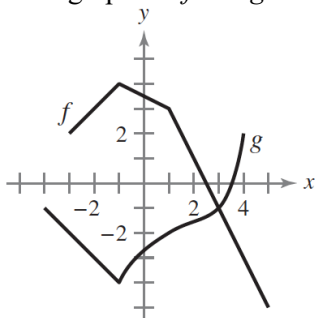


| | |
|----|---|
| 1 | Find $f(0)$ and $f(-6)$. |
| 2 | Find $f(6)$ and $f(11)$ |
| 3 | Is $f(3)$ positive or negative? Explain your reasoning . |
| 4 | For what numbers x is $f(x) = 0$? |
| 5 | For what numbers x is $f(x) > 0$? (Hint: this answer will be in interval form) |
| 6 | What is the domain of f ? |
| 7 | What are the x -intercepts? |
| 8 | What are the y -intercepts? |
| 9 | For how many values of x does $f(x) = \frac{1}{2}$? |
| 10 | How often does the line $x = 5$ intersect the graph of f ? |
| 11 | For what values of x does $f(x) = 3$? |

Given the function(s), find the indicated values.

| | |
|----|---|
| 12 | $f(x) = 3 - x^2$; Find $f(0)$; $f(\sqrt{3})$; $f(-2)$; |
| 13 | $f(x) = \begin{cases} 3 - x, & x < 0 \\ 2x, & x \geq 0 \end{cases}$; Find $f(-1)$; $f(0)$; $f(1)$; $f(a^2)$ |
| 14 | $f(x) = x^2 - 3x + 2$; Find $\frac{f(x+h) - f(x)}{h}$ The Difference Quotient!!! |
| 15 | $f(x) = \sin x$ and $g(x) = \pi x$; Find $f(g(2))$; $g(f(0))$; $g\left(f\left(\frac{\pi}{4}\right)\right)$ |

Use the graphs of f and g to evaluate each expression. If the result is undefined, explain why.



16. $f(g(3))$
17. $g(f(2))$
18. $g(f(5))$
19. $f(g(-3))$
20. $g(f(-1))$
21. $f(g(-1))$