

The Weekly Rigor

SAT Math Test Problem Children: Function Notation

(Part 2)

To solve the first problem, we simply substitute the expression “ $-2x$ ” in place of “ x ” in the given equation $f(x) = -3x + 5$. Hence, we get $f(-2x) = -3(-2x) + 5$, which simplifies to $f(-2x) = 6x + 5$. So, the answer is “ $6x + 5$.”

To answer the second problem, first note that $g(2) = 3(2) + 1$. Hence, by substitution, $f(2) = g(2) + 4 = [3(2) + 1] + 4 = 7 + 4 = 11$, viz., the answer is 11.

The last problem requires two steps. First, solving for the value of b . Second, using the value of b to find $f(-2)$. Since $f(6) = 8$, $8 = \frac{3}{2}(6) + b$. Hence, $8 = 3(3) + b$. So, $8 = 9 + b$. Thus, $-1 = b$. Now we can reformulate the function as $f(x) = \frac{3}{2}x - 1$. Hence, $f(-2) = \frac{3}{2}(-2) - 1 = -3 - 1 = -4$. Therefore, the answer is -4 .

PROBLEMS

1. If $f(x) = -3x + 6$, what is $f(-2x)$ equal to?
2. If $f(x) = -2x + 7$, what is $f(-4x)$ equal to?
3. If $f(x) = 2x + 4$, what is $f(3x)$ equal to?
4. If $f(x) = -x + 5$, what is $f(-2x)$ equal to?
5. If $g(x) = 3x + 2$ and $f(x) = g(x) + 5$, what is $f(2)$?

6. If $g(x) = x + 1$ and $f(x) = g(x) + 3$, what is $f(3)$?

7. If $g(x) = -x + 2$ and $f(x) = g(x) + 4$, what is $f(5)$?

8. If $g(x) = -2x - 3$ and $f(x) = g(x) - 4$, what is $f(-3)$?

9.

$$f(x) = \frac{3}{2}x + b$$

In the function above, b is a constant. If $f(4) = 6$, what is the value of $f(-2)$?

10.

$$f(x) = \frac{5}{2}x + b$$

In the function above, b is a constant. If $f(6) = 8$, what is the value of $f(-4)$?

11.

$$f(x) = \frac{3}{4}x + b$$

In the function above, b is a constant. If $f(8) = 12$, what is the value of $f(4)$?

12.

$$f(x) = \frac{6}{8}x + b$$

In the function above, b is a constant. If $f(16) = -12$, what is the value of $f(-24)$?

“Only he who never plays, never loses.”

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