

Composition and Values of Functions

Given $f(x) = 3x - 7$ and $g(x) = x^2 + 1$, find the following:

1. $f(4)$

2. $f(-2)$

3. $f(0)$

4. $f(a + 1)$

5. $f(2n)$

6. $f(2a + 4)$

7. $g(6)$

8. $g(0)$

9. $g(2a + 1)$

10. $g(-5n)$

11. $g(x + 4)$

12. $f(x - 9)$

13. $f(x^2)$

14. $g(x^2 + 1)$

Remember that when you are composing functions, you're just plugging one function into another. It's just like what you did in the problems above!

15. $f(g(x)) = f(\underline{\hspace{2cm}})$

16. $g(f(x)) = g(\underline{\hspace{2cm}})$

17. $f(f(x)) = f(\underline{\hspace{2cm}})$

18. $g(g(x)) = g(\underline{\hspace{2cm}})$

Answers: 1. 5 2. -13 3. -7 4. $3a - 4$ 5. $6n - 7$ 6. $6a + 5$ 7. 37 8. 1 9. $4a^2 + 4a + 2$ 10. $25n^2 + 1$
11. $x^2 + 8x + 17$ 12. $3x - 34$ 13. $3x^2 - 7$ 14. $x^4 + 2x^2 + 2$ 15. $f(x^2 + 1) = 3x^2 - 4$
16. $g(3x - 7) = 9x^2 - 42x + 50$ 17. $f(3x - 7) = 9x - 28$ 18. $g(x^2 + 1) = x^4 + 2x^2 + 2$