

If $f(x) = x^2 - 1$, $g(x) = 2x - 3$, and $h(x) = 1 - 4x$, find the following new functions, as well as any values indicated.

1. a. $(f - g)(x) =$

b. $(f - g)(3) =$

2. a. $(g + f)(x) =$

b. $(g + f)(-2) =$

3. a. $(f + h)(x) =$

b. $(f + h)(0) =$

4. a. $(g \cdot h)(x) =$

b. $(g \cdot h)(4) =$

5. a. $(f \cdot g)(x) =$

b. $(f \cdot g)(-1) =$

6. a. $\left(\frac{f}{g}\right)(x) =$

b. $\left(\frac{f}{g}\right)(2) =$

7. a. $\left(\frac{g}{h}\right)(x) =$

b. $\left(\frac{g}{h}\right)(0) =$

Let $f(x) = 2x - 1$, $g(x) = 3x$, and $h(x) = x^2 + 1$. Compute the following:

1. $f(g(-3))$

2. $f(h(7))$

3. $g(h(24))$

4. $h(f(9))$

5. $g(f(0))$

6. $h(g(-4))$

7. $f(g(h(2)))$

8. $h(g(f(5)))$

9. $g(f(h(-6)))$

10. $f(f(x))$

11. $g(g(x))$

12. $h(h(x))$