

Chapter 6 Quiz 2

Form G

Do you know HOW?

Let $f(x) = x^2 - x - 12$ and $g(x) = x - 4$. Perform each function operation and then find the domain.

1. $f(x) - 2g(x)$

2. $f(x) \cdot g(x)$

3. $\frac{f(x)}{g(x)}$

4. $\frac{g(x)}{f(x)}$

Let $f(x) = 2x - 5$ and $g(x) = x^2$. Find each composition.

5. $(f \circ g)(x)$

6. $(g \circ f)(x)$

Find the inverse of each function. Is the inverse a function?

7. $g(x) = \sqrt{\frac{x}{2}} - 3$

8. $h(x) = 5 - x^3$

Graph. Find the domain and range of each function.

9. $y = 2 - \sqrt{x}$

10. $y = \sqrt{x-1} + 1$

BONUS

11. **Reasoning** Suppose the cost of an item is x dollars. It is marked up by $n\%$ and, later, that new cost is reduced by $n\%$. Is the final cost equal to x dollars? Use a composition of functions to justify your answer.