



Puzzle Time

Why Was The Student's Report Card Wet?

Write the letter of each answer in the box containing the exercise number.

Let $f(x) = \sqrt{x-1}$, $g(x) = 3x + 2$, and $h(x) = 4x^2 + 1$.

Find the indicated value.

1. $f(g(5))$
2. $g(f(5))$
3. $g(h(-1))$
4. $h(g(-1))$
5. $h(f(1))$
6. $f(h(1))$

Find $f(g(x))$. State the domain of each composition.

7. $f(x) = x^2$, $g(x) = |x - 5|$
8. $f(x) = |x - 5|$, $g(x) = x^2$
9. $f(x) = -x + 4$, $g(x) = 3x$
10. $f(x) = 3x$, $g(x) = -x + 4$
11. $f(x) = \sqrt{x-1}$, $g(x) = 3x + 2$
12. $f(x) = 3x + 2$, $g(x) = \sqrt{x-1}$
13. $f(x) = 3x + 2$, $g(x) = 4x^2 + 1$
14. $f(x) = 4x^2 + 1$, $g(x) = 3x + 2$
15. $f(x) = 4x^2 + 1$, $g(x) = \sqrt{x-1}$
16. $f(x) = \sqrt{x-1}$, $g(x) = 4x^2 + 1$

Answers

- I. 4
- S. 1
- W. 17
- B. 2
- T. 8
- A. 5
- C. $\sqrt{3x+1}$, $x \geq -\frac{1}{3}$
- L. $3\sqrt{x-1} + 2$, $x \geq 1$
- L. $2|x|$, all real numbers
- L. $|x^2 - 5|$, all real numbers
- V. $36x^2 + 48x + 17$, all real numbers
- E. $x^2 - 10x + 25$, all real numbers
- E. $12x^2 + 5$, all real numbers
- E. $4x - 3$, $x \geq 1$ all real numbers
- W. $-3x + 12$, all real numbers
- O. $-3x + 4$, all real numbers

1	2		3	4	5		6	7	8	9	10		11		12	13	14	15	16
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