

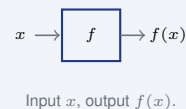
Function Notation

Name: _____	Date: _____	Score: _____ / 18
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Quick Review and Helpful Hints

$f(x)$ means “the value of the function f at x .” To *evaluate*, substitute the given number everywhere you see x and simplify. To *solve* $f(x) = k$, set the rule equal to k and solve for x . The letter (like f, g, h) is just a name.

▶ **Example:** Given $f(x) = 4x - 9$, find $f(5)$. **Work:** Substitute 5 for x : $f(5) = 4(5) - 9 = 20 - 9$.
 ★ **Answer:** 11



◆ Practice Problems

Evaluate or solve as directed.

- | | |
|---|--|
| <p>1. $f(x) = 4x - 9$; $f(5) =$ _____</p> <p>2. $g(x) = x^2 + 2$; $g(-3) =$ _____</p> <p>3. $h(x) = -2x + 7$; $h(0) =$ _____</p> <p>4. $f(x) = 3x^2 - x$; $f(2) =$ _____</p> <p>5. $p(x) = \frac{x+6}{2}$; $p(8) =$ _____</p> <p>6. $g(x) = 7 - 3x$; $g(-4) =$ _____</p> <p>7. $f(x) = 2x + 5$; $f(x) = 17$, $x =$ _____</p> | <p>8. $g(x) = x^2 - 1$; $g(x) = 24$, $x =$ _____</p> <p>9. $h(x) = -x + 10$; $h(x) = 3$, $x =$ _____</p> <p>10. $f(x) = 6x$; $f(x) = 42$, $x =$ _____</p> <p>11. $f(x) = x^2 + 3x$; $f(-2) =$ _____</p> <p>12. $g(x) = x - 4$; $g(1) =$ _____</p> <p>13. $f(x) = 5x + 1$; $f(3) =$ _____</p> <p>14. $f(x) = 2x - 3$; $f(x) = 9$, $x =$ _____</p> |
|---|--|

◆ Word Problems

15. A function gives cost $C(x) = 3x + 5$ for x items. Find $C(4)$. _____
16. $f(x) = 2x + 1$ models a pattern. For what x is $f(x) = 15$? _____
17. A ball's height is $h(t) = 20 - 5t$ meters after t seconds. Find $h(2)$. _____
18. Given $g(x) = x^2$, find $g(6)$. _____



Answer Keys

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

11.

12.

13.

14.

15.

16.

17.

18.

Step-by-Step Explanations

1. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Substitute 5: $4(5) - 9 = 20 - 9 = 11$. So the final answer is 11.

2. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Substitute -3 : $(-3)^2 + 2 = 9 + 2 = 11$. So the final answer is 11.

3. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Substitute 0: $-2(0) + 7 = 7$. So the final answer is 7.

4. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Substitute 2: $3(2)^2 - 2 = 3(4) - 2 = 12 - 2 = 10$. So the final answer is 10.

5. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Substitute 8: $\frac{8+6}{2} = \frac{14}{2} = 7$. So the final answer is 7.

6. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Substitute -4 : $7 - 3(-4) = 7 + 12 = 19$. So the final answer is 19.

7. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Set $2x + 5 = 17$. Subtract 5: $2x = 12$, so $x = 6$. So the final answer is 6.

8. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Set $x^2 - 1 = 24$, so $x^2 = 25$ and $x = \pm 5$. So the final answer is $x = \pm 5$.

9. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Set $-x + 10 = 3$. Then $-x = -7$, so $x = 7$. So the final answer is 7.

10. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Set $6x = 42$. Divide by 6: $x = 7$. So the final answer is 7.

11. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Substitute -2 : $(-2)^2 + 3(-2) = 4 - 6 = -2$. So the final answer is -2 .

12. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Substitute 1: $|1 - 4| = |-3| = 3$. So the final answer is 3.

13. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Substitute 3: $5(3) + 1 = 15 + 1 = 16$. So the final answer is 16.

14. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Set $2x - 3 = 9$. Add 3: $2x = 12$, so $x = 6$. So the final answer is 6.

15. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Substitute 4: $C(4) = 3(4) + 5 = 12 + 5 = 17$. So the final answer is 17.

16. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Set $2x + 1 = 15$. Subtract 1: $2x = 14$, so $x = 7$. So the final answer is 7.

17. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Substitute 2: $20 - 5(2) = 20 - 10 = 10$ meters. So the final answer is 10.

18. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Substitute 6: $6^2 = 36$. So the final answer is 36.



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