

# Functions and Function Notation

Input-output rules, notation, tables, graphs, and function meaning.

Name \_\_\_\_\_ Date \_\_\_\_\_

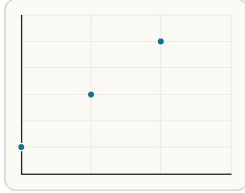
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## Completion Reward



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### 1. What makes a relation a function?



A relation is a function only when each x-value is paired with exactly one y-value.

- A. Each input has exactly one output
- B. Each output has exactly one input
- C. It always forms a straight line
- D. It has no variables

### 1.3. If a vertical line hits a graph twice, the graph is:

- A. a function
- B. not a function
- C. always linear
- D. always constant

### 2. Why is the relation $\{(2, 5), (2, 7), (4, 1)\}$ not a function?

- A. The input 2 is paired with two different outputs.
- B. The output 1 is too small.
- C. The relation has too many ordered pairs.
- D. A function cannot repeat an input at all.

### 2.3. Can two different inputs share the same output in a function?

- A. Yes
- B. No
- C. Only for lines
- D. Only in tables

### 1.1. A relation is a function when:

- A. each output has one input
- B. each input has one output
- C. the graph crosses the x-axis
- D. the equation has x and y

### 1.4. Can two different inputs share the same output in a function?

- A. Yes
- B. No
- C. Only for lines
- D. Only for tables

### 2.1. A relation is a function when:

- A. each output has one input
- B. each input has one output
- C. every output is different
- D. the graph is a line

### 2.4. Which relation is a function?

- A.  $\{(1, 3), (1, 5)\}$
- B.  $\{(2, 4), (3, 4)\}$
- C.  $\{(0, 1), (0, 2)\}$
- D.  $\{(7, 8), (7, 8), (7, 9)\}$

### 1.2. Why does a repeated input sometimes break a function?

- A. One input should not map to two outputs
- B. Outputs can never repeat
- C. A function must be linear
- D. Inputs must be positive

### 1.5. Which relation could be a function?

- A. 1 maps to 3 and 4
- B. 2 maps to 5 only
- C. 7 maps to 1 and 9
- D. 0 maps to -1 and 2

### 2.2. Why is $\{(2, 5), (2, 7), (4, 1)\}$ not a function?

- A. because 2 appears twice with different outputs
- B. because 5 is too large
- C. because 4 appears once
- D. because there are three points

### 2.5. The rule 'one output per input' talks about which values?

- A. the x-values first
- B. the y-values first
- C. the slope values
- D. the intercept values

**3. If the point (3, 7) is on the graph of f, what does that mean?**

- A.  $f(3) = 7$
- B.  $f(7) = 3$
- C. The slope is  $7/3$
- D. The domain is only 3 and 7

3.3. If a graph shows the point (4, -1), what is the output when  $x = 4$ ?

- A. 4
- B. -1
- C. 3
- D. 5

**4. In  $C = 0.25m + 2$ , where C is total cost and m is minutes parked, which variable is independent?**

- A. C
- B. Both variables
- C. Neither variable
- D. m

4.3. In  $y = 3x + 1$ , which quantity usually depends on the other?

- A. x depends on y
- B. y depends on x
- C. both depend equally
- D. neither depends

**5. In a function, what is the range?**

- A. The set of input values
- B. The slope of the graph
- C. The set of output values
- D. The variable name only

5.3. If x is the number of tickets sold, which domain value makes sense?

- A. -3
- B. 1.5
- C. 8
- D.  $-1/2$

3.1. If the point (2, 5) is on the graph of f, then  $f(2) = ?$

- A. 2
- B. 3
- C. 5
- D. 7

3.4. A point on a function graph always tells you:

- A. one input-output pair
- B. the slope only
- C. the domain only
- D. the inverse

4.1. A machine subtracts 4 from the input and then doubles the result. Which rule matches?

- A.  $f(x) = 2x - 4$
- B.  $f(x) = 2(x - 4)$
- C.  $f(x) = x - 8$
- D.  $f(x) = 4 - 2x$

4.4. If a rule says 'add 5, then square', which expression matches?

- A.  $(x + 5)^2$
- B.  $x^2 + 5$
- C.  $5x^2$
- D.  $x + 25$

5.1. The domain of a function is the set of:

- A. inputs
- B. outputs
- C. slopes
- D. intercepts

5.4. On a graph, the range is usually read along the:

- A. horizontal axis
- B. vertical axis
- C. diagonal
- D. origin only

3.2. If (3, 7) lies on the graph of f, what does that mean?

- A.  $f(7) = 3$
- B.  $f(3) = 7$
- C. the slope is  $7/3$
- D. the range is 3

3.5. On a function graph, the input is usually read on the:

- A. vertical axis
- B. horizontal axis
- C. midline
- D. slope triangle

4.2. In  $C = 0.25m + 2$ , where C is total cost and m is minutes parked, which variable is independent?

- A. C
- B. m
- C. both
- D. neither

4.5. The independent variable in a context is usually:

- A. the input you control or choose
- B. the final answer only
- C. the constant term
- D. the slope

5.2. The range of a function is the set of:

- A. inputs
- B. outputs
- C. equations
- D. ordered pairs only

5.5. On a graph, the domain is usually read along the:

- A. horizontal axis
- B. vertical axis
- C. midline
- D. intercepts only

6. If  $f(x) = 2x + 3$ , what does  $f(4)$  mean?

- A. Multiply  $f$  by 4
- B. The slope of the graph
- C. The  $y$ -intercept
- D. The output when  $x = 4$

6.1. In  $h(6)$ , the 6 is:

- A. the input
- B. the output
- C. the slope
- D. the range

6.2. If  $f(x) = x + 8$ , then  $f(2)$  equals:

- A.  $2f$
- B. 10
- C. 16
- D.  $8f$

6.3. The notation  $p(4)$  is best read as:

- A.  $p$  times 4
- B. the value of  $p$  at 4
- C. 4 divided by  $p$
- D. the slope of  $p$

6.4. If  $q(x) = 3x - 1$ , then  $q(0)$  means:

- A. the output when  $x = 0$
- B.  $q$  multiplied by 0
- C. the domain is 0
- D. the inverse of  $q$

6.5. If  $m(5) = 12$ , that means:

- A. input 12 gives output 5
- B. input 5 gives output 12
- C. the slope is  $12/5$
- D. the domain is 12

7. To find  $g(4)$  when  $g(x) = 2x + 9$ , what should you do first?

- A. Multiply 4 by  $g$ .
- B. Add 4 to the output 9 only.
- C. Replace  $x$  with 4 in the rule.
- D. Set  $g$  equal to 0.

7.1. If  $f(x) = 3x + 2$ , what is  $f(4)$ ?

- A. 10
- B. 12
- C. 14
- D. 18

7.2. If  $g(x) = 5 - 2x$ , what is  $g(-3)$ ?

- A. -1
- B. 11
- C. 1
- D. -11

7.3. If  $h(x) = x^2 + 1$ , what is  $h(2)$ ?

- A. 3
- B. 4
- C. 5
- D. 6

7.4. If  $r(x) = 7x - 9$ , what is  $r(0)$ ?

- A. -9
- B. 0
- C. 7
- D. 9

7.5. If  $s(x) = 2x + 1$ , which is larger?

- A.  $s(1)$
- B.  $s(3)$
- C. they are equal
- D. cannot tell

8. A student says a relation is not a function if two different inputs give the same output. What is wrong?

- A. A function is allowed to send different inputs to the same output.
- B. Every function must have different outputs for every input.
- C. Functions are not allowed to use ordered pairs.
- D. The student should have squared each output first.

8.1. A relation is a function when:

- A. each output has one input
- B. each input has one output
- C. every output is different
- D. the graph is a line

8.2. Why is  $\{(2, 5), (2, 7), (4, 1)\}$  not a function?

- A. because 2 appears twice with different outputs
- B. because 5 is too large
- C. because 4 appears once
- D. because there are three points

8.3. Can two different inputs share the same output in a function?

- A. Yes
- B. No
- C. Only for lines
- D. Only in tables

8.4. Which relation is a function?

- A.  $\{(1, 3), (1, 5)\}$
- B.  $\{(2, 4), (3, 4)\}$
- C.  $\{(0, 1), (0, 2)\}$
- D.  $\{(7, 8), (7, 8), (7, 9)\}$

8.5. The rule 'one output per input' talks about which values?

- A. the  $x$ -values first
- B. the  $y$ -values first
- C. the slope values
- D. the intercept values

9. A student says  $f(4)$  means  $f$  multiplied by 4. What is wrong?

- A.  $f(4)$  always equals 4
- B.  $f(4)$  means the function output at input 4
- C. Functions cannot use numbers in parentheses
- D. Nothing is wrong

9.3. The notation  $p(4)$  is best read as:

- A.  $p$  times 4
- B. the value of  $p$  at 4
- C. 4 divided by  $p$
- D. the slope of  $p$

10. If  $r(x) = 5 - x$ , find  $r(-4)$ . Answer with a number.

10.3. If  $h(x) = x^2 + 1$ , what is  $h(2)$ ?

- A. 3
- B. 4
- C. 5
- D. 6

11. If  $g(x) = x^2 - 4$ , find  $g(3)$ . Answer with a number.

11.3. If  $h(x) = x^2 + 1$ , what is  $h(2)$ ?

- A. 3
- B. 4
- C. 5
- D. 6

9.1. In  $h(6)$ , the 6 is:

- A. the input
- B. the output
- C. the slope
- D. the range

9.4. If  $q(x) = 3x - 1$ , then  $q(0)$  means:

- A. the output when  $x = 0$
- B.  $q$  multiplied by 0
- C. the domain is 0
- D. the inverse of  $q$

10.1. If  $f(x) = 3x + 2$ , what is  $f(4)$ ?

- A. 10
- B. 12
- C. 14
- D. 18

10.4. If  $r(x) = 7x - 9$ , what is  $r(0)$ ?

- A. -9
- B. 0
- C. 7
- D. 9

11.1. If  $f(x) = 3x + 2$ , what is  $f(4)$ ?

- A. 10
- B. 12
- C. 14
- D. 18

11.4. If  $r(x) = 7x - 9$ , what is  $r(0)$ ?

- A. -9
- B. 0
- C. 7
- D. 9

9.2. If  $f(x) = x + 8$ , then  $f(2)$  equals:

- A.  $2f$
- B. 10
- C. 16
- D.  $8f$

9.5. If  $m(5) = 12$ , that means:

- A. input 12 gives output 5
- B. input 5 gives output 12
- C. the slope is  $12/5$
- D. the domain is 12

10.2. If  $g(x) = 5 - 2x$ , what is  $g(-3)$ ?

- A. -1
- B. 11
- C. 1
- D. -11

10.5. If  $s(x) = 2x + 1$ , which is larger?

- A.  $s(1)$
- B.  $s(3)$
- C. they are equal
- D. cannot tell

11.2. If  $g(x) = 5 - 2x$ , what is  $g(-3)$ ?

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- B. 11
- C. 1
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11.5. If  $s(x) = 2x + 1$ , which is larger?

- A.  $s(1)$
- B.  $s(3)$
- C. they are equal
- D. cannot tell

**12. If you want the output when  $x = 0$ , which representation is quickest to use?**

- A. A long paragraph with no rule
- B. A picture with no labeled points
- C. A random list of outputs only
- D. An equation like  $f(x) = 2x + 5$

**12.1. If  $f(x) = 2x + 3$  and  $g(x) = x + 7$ , which function has the greater output at  $x = 4$ ?**

- A. f
- B. g
- C. they are equal
- D. cannot tell

**12.2. If you want the output when  $x = 0$ , which representation is usually quickest?**

- A. a direct equation rule
- B. a long story problem
- C. a blank graph
- D. a paragraph without numbers

**12.3. A table gives  $g(2) = 6$  and an equation gives  $f(2) = 5$ . Which output is greater?**

- A. f
- B. g
- C. they are equal
- D. cannot tell

**12.4. To find one exact output, which is usually most useful?**

- A. any representation with the needed input-output information
- B. only a graph
- C. only a table
- D. only words

**12.5. If two functions have the same output at one input, that means:**

- A. they are the same function forever
- B. they match at that one input
- C. their slopes are equal
- D. their domains are equal

**13. If t is the number of tickets sold, which value makes sense in the domain?**

- A. -3
- B. 2.5
- C. 8
- D. -1.2

**13.1. The domain of a function is the set of:**

- A. inputs
- B. outputs
- C. slopes
- D. intercepts

**13.2. The range of a function is the set of:**

- A. inputs
- B. outputs
- C. equations
- D. ordered pairs only

**13.3. If x is the number of tickets sold, which domain value makes sense?**

- A. -3
- B. 1.5
- C. 8
- D. -1/2

**13.4. On a graph, the range is usually read along the:**

- A. horizontal axis
- B. vertical axis
- C. diagonal
- D. origin only

**13.5. On a graph, the domain is usually read along the:**

- A. horizontal axis
- B. vertical axis
- C. midline
- D. intercepts only

**14. In a tickets-sold context, what kind of values belong in the domain?**

- A. Only negative numbers
- B. Only output values
- C. Reasonable input values like whole numbers of tickets
- D. Any symbol at all

**14.1. The domain of a function is the set of:**

- A. inputs
- B. outputs
- C. slopes
- D. intercepts

**14.2. The range of a function is the set of:**

- A. inputs
- B. outputs
- C. equations
- D. ordered pairs only

**14.3. If x is the number of tickets sold, which domain value makes sense?**

- A. -3
- B. 1.5
- C. 8
- D. -1/2

**14.4. On a graph, the range is usually read along the:**

- A. horizontal axis
- B. vertical axis
- C. diagonal
- D. origin only

**14.5. On a graph, the domain is usually read along the:**

- A. horizontal axis
- B. vertical axis
- C. midline
- D. intercepts only

**15. Which set of ordered pairs is not a function?**

- A.  $\{(1,2), (1,5), (3,4)\}$
- B.  $\{(1,2), (2,3), (3,4)\}$
- C.  $\{(0,1), (2,1), (4,1)\}$
- D.  $\{(-1,0), (0,0), (1,0)\}$

**15.3. Can two different inputs share the same output in a function?**

- A. Yes
- B. No
- C. Only for lines
- D. Only in tables

**16. Why is  $x = 4$  not a function of  $x$ ?**



At  $x = 4$ , many  $y$ -values occur, so the relation does not assign one output to that input.

- A. Because one  $x$ -value is paired with many  $y$ -values on the vertical line
- B. Because the graph is not straight
- C. Because the  $y$ -intercept is 4
- D. Because all equations are functions

**16.3. Can two different inputs share the same output in a function?**

- A. Yes
- B. No
- C. Only for lines
- D. Only in tables

**17. Which set of ordered pairs represents a function?**

- A.  $\{(1, 2), (1, 3), (2, 4)\}$
- B.  $\{(2, 1), (2, 4), (3, 5)\}$
- C.  $\{(0, 5), (1, 7), (2, 9)\}$
- D.  $\{(4, 0), (4, 1), (5, 2)\}$

**17.3. Can two different inputs share the same output in a function?**

- A. Yes
- B. No
- C. Only for lines
- D. Only in tables

**15.1. A relation is a function when:**

- A. each output has one input
- B. each input has one output
- C. every output is different
- D. the graph is a line

**15.4. Which relation is a function?**

- A.  $\{(1, 3), (1, 5)\}$
- B.  $\{(2, 4), (3, 4)\}$
- C.  $\{(0, 1), (0, 2)\}$
- D.  $\{(7, 8), (7, 8), (7, 9)\}$

**16.1. A relation is a function when:**

- A. each output has one input
- B. each input has one output
- C. every output is different
- D. the graph is a line

**16.4. Which relation is a function?**

- A.  $\{(1, 3), (1, 5)\}$
- B.  $\{(2, 4), (3, 4)\}$
- C.  $\{(0, 1), (0, 2)\}$
- D.  $\{(7, 8), (7, 8), (7, 9)\}$

**17.1. A relation is a function when:**

- A. each output has one input
- B. each input has one output
- C. every output is different
- D. the graph is a line

**17.4. Which relation is a function?**

- A.  $\{(1, 3), (1, 5)\}$
- B.  $\{(2, 4), (3, 4)\}$
- C.  $\{(0, 1), (0, 2)\}$
- D.  $\{(7, 8), (7, 8), (7, 9)\}$

**15.2. Why is  $\{(2, 5), (2, 7), (4, 1)\}$  not a function?**

- A. because 2 appears twice with different outputs
- B. because 5 is too large
- C. because 4 appears once
- D. because there are three points

**15.5. The rule 'one output per input' talks about which values?**

- A. the  $x$ -values first
- B. the  $y$ -values first
- C. the slope values
- D. the intercept values

**16.2. Why is  $\{(2, 5), (2, 7), (4, 1)\}$  not a function?**

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- A. because 2 appears twice with different outputs
- B. because 5 is too large
- C. because 4 appears once
- D. because there are three points

**17.5. The rule 'one output per input' talks about which values?**

- A. the  $x$ -values first
- B. the  $y$ -values first
- C. the slope values
- D. the intercept values

**18. Does the table represent a function?**

x	y
1	4
2	5
2	7
3	8

A table fails to represent a function when the same input is assigned two different outputs.

- A. Yes, because the outputs are different
- B. No, because  $x = 2$  is paired with two outputs
- C. Yes, because the x-values are in order
- D. No, because one output is larger than the others

**18.3. Can two different inputs share the same output in a function?**

- A. Yes
- B. No
- C. Only for lines
- D. Only in tables

**19. Which equation matches the table?**

x	y
-1	1
0	3
1	5
2	7

Track the starting value and how the output changes as x increases to identify the matching equation.

- A.  $y = 2x + 3$
- B.  $y = x + 3$
- C.  $y = 3x + 2$
- D.  $y = 2x + 1$

**19.3. A table lists  $x = 2$  with outputs 5 and 7. That means the table is:**

- A. a function
- B. not a function
- C. always linear
- D. always quadratic

**18.1. A relation is a function when:**

- A. each output has one input
- B. each input has one output
- C. every output is different
- D. the graph is a line

**18.4. Which relation is a function?**

- A.  $\{(1, 3), (1, 5)\}$
- B.  $\{(2, 4), (3, 4)\}$
- C.  $\{(0, 1), (0, 2)\}$
- D.  $\{(7, 8), (7, 8), (7, 9)\}$

**19.1. A table represents a function when:**

- A. an input can have two outputs
- B. each input has only one output
- C. every output is different
- D. the outputs are increasing

**19.4. If a table shows  $x = 3$  paired with  $y = -2$ , what is the output at 3?**

- A. 3
- B. -2
- C. 1
- D. 5

**18.2. Why is  $\{(2, 5), (2, 7), (4, 1)\}$  not a function?**

- A. because 2 appears twice with different outputs
- B. because 5 is too large
- C. because 4 appears once
- D. because there are three points

**18.5. The rule 'one output per input' talks about which values?**

- A. the x-values first
- B. the y-values first
- C. the slope values
- D. the intercept values

**19.2. A table shows inputs 0, 1, 2 and outputs 5, 7, 9. Which rule matches?**

- A.  $y = x + 5$
- B.  $y = 2x + 5$
- C.  $y = 3x + 2$
- D.  $y = x^2 + 5$

**19.5. In a function table, the first column usually lists:**

- A. outputs
- B. inputs
- C. slopes
- D. intercepts

**20. Which relation is a function?**

- A.  $\{(1, 2), (2, 4), (3, 6)\}$
- B.  $\{(1, 2), (1, 5), (3, 6)\}$
- C.  $\{(0, 1), (2, 3), (2, 4)\}$
- D.  $\{(4, 8), (4, 9), (5, 10)\}$

**20.3. Can two different inputs share the same output in a function?**

- A. Yes
- B. No
- C. Only for lines
- D. Only in tables

**21. A table shows inputs 0, 1, 2 and outputs 5, 7, 9. Which rule matches the table?**

- A.  $f(x) = x + 5$
- B.  $f(x) = 2x + 5$
- C.  $f(x) = 5x + 2$
- D.  $f(x) = 2x + 3$

**21.3. A table lists  $x = 2$  with outputs 5 and 7. That means the table is:**

- A. a function
- B. not a function
- C. always linear
- D. always quadratic

**22. A machine subtracts 4 from the input and then doubles the result. Which rule matches the machine?**

- A.  $y = 2(x - 4)$
- B.  $y = x - 8$
- C.  $y = 2x + 4$
- D.  $y = x/2 - 4$

**22.3. In  $y = 3x + 1$ , which quantity usually depends on the other?**

- A.  $x$  depends on  $y$
- B.  $y$  depends on  $x$
- C. both depend equally
- D. neither depends

**20.1. A relation is a function when:**

- A. each output has one input
- B. each input has one output
- C. every output is different
- D. the graph is a line

**20.4. Which relation is a function?**

- A.  $\{(1, 3), (1, 5)\}$
- B.  $\{(2, 4), (3, 4)\}$
- C.  $\{(0, 1), (0, 2)\}$
- D.  $\{(7, 8), (7, 8), (7, 9)\}$

**21.1. A table represents a function when:**

- A. an input can have two outputs
- B. each input has only one output
- C. every output is different
- D. the outputs are increasing

**21.4. If a table shows  $x = 3$  paired with  $y = -2$ , what is the output at 3?**

- A. 3
- B. -2
- C. 1
- D. 5

**22.1. A machine subtracts 4 from the input and then doubles the result. Which rule matches?**

- A.  $f(x) = 2x - 4$
- B.  $f(x) = 2(x - 4)$
- C.  $f(x) = x - 8$
- D.  $f(x) = 4 - 2x$

**22.4. If a rule says 'add 5, then square', which expression matches?**

- A.  $(x + 5)^2$
- B.  $x^2 + 5$
- C.  $5x^2$
- D.  $x + 25$

**20.2. Why is  $\{(2, 5), (2, 7), (4, 1)\}$  not a function?**

- A. because 2 appears twice with different outputs
- B. because 5 is too large
- C. because 4 appears once
- D. because there are three points

**20.5. The rule 'one output per input' talks about which values?**

- A. the  $x$ -values first
- B. the  $y$ -values first
- C. the slope values
- D. the intercept values

**21.2. A table shows inputs 0, 1, 2 and outputs 5, 7, 9. Which rule matches?**

- A.  $y = x + 5$
- B.  $y = 2x + 5$
- C.  $y = 3x + 2$
- D.  $y = x^2 + 5$

**21.5. In a function table, the first column usually lists:**

- A. outputs
- B. inputs
- C. slopes
- D. intercepts

**22.2. In  $C = 0.25m + 2$ , where  $C$  is total cost and  $m$  is minutes parked, which variable is independent?**

- A.  $C$
- B.  $m$
- C. both
- D. neither

**22.5. The independent variable in a context is usually:**

- A. the input you control or choose
- B. the final answer only
- C. the constant term
- D. the slope

**23. Which set of ordered pairs is not a function?**

- A.  $\{(0, 3), (1, 5), (2, 7)\}$
- B.  $\{(2, 2), (3, 4), (4, 6)\}$
- C.  $\{(-1, 1), (0, 0), (1, 1)\}$
- D.  $\{(1, 4), (1, 6), (2, 7)\}$

**23.3. Can two different inputs share the same output in a function?**

- A. Yes
- B. No
- C. Only for lines
- D. Only in tables

**24. Which equation matches the table?**

x	y
0	1
1	3
2	5

The outputs start at 1 and increase by 2 each time  $x$  increases by 1.

- A.  $y = x + 2$
- B.  $y = 2x + 1$
- C.  $y = 3x$
- D.  $y = x^2 + 1$

**24.3. A table lists  $x = 2$  with outputs 5 and 7. That means the table is:**

- A. a function
- B. not a function
- C. always linear
- D. always quadratic

**25. If  $f(x) = 2x + 3$  and  $g(x) = x + 7$ , which function has the greater output at  $x = 4$ ?**

- A.  $f$
- B.  $g$
- C. They are equal
- D. Cannot determine

**25.3. A table gives  $g(2) = 6$  and an equation gives  $f(2) = 5$ . Which output is greater?**

- A.  $f$
- B.  $g$
- C. they are equal
- D. cannot tell

**23.1. A relation is a function when:**

- A. each output has one input
- B. each input has one output
- C. every output is different
- D. the graph is a line

**23.4. Which relation is a function?**

- A.  $\{(1, 3), (1, 5)\}$
- B.  $\{(2, 4), (3, 4)\}$
- C.  $\{(0, 1), (0, 2)\}$
- D.  $\{(7, 8), (7, 8), (7, 9)\}$

**24.1. A table represents a function when:**

- A. an input can have two outputs
- B. each input has only one output
- C. every output is different
- D. the outputs are increasing

**24.4. If a table shows  $x = 3$  paired with  $y = -2$ , what is the output at 3?**

- A. 3
- B. -2
- C. 1
- D. 5

**25.1. If  $f(x) = 2x + 3$  and  $g(x) = x + 7$ , which function has the greater output at  $x = 4$ ?**

- A.  $f$
- B.  $g$
- C. they are equal
- D. cannot tell

**25.4. To find one exact output, which is usually most useful?**

- A. any representation with the needed input-output information
- B. only a graph
- C. only a table
- D. only words

**23.2. Why is  $\{(2, 5), (2, 7), (4, 1)\}$  not a function?**

- A. because 2 appears twice with different outputs
- B. because 5 is too large
- C. because 4 appears once
- D. because there are three points

**23.5. The rule 'one output per input' talks about which values?**

- A. the  $x$ -values first
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- C. the slope values
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**24.2. A table shows inputs 0, 1, 2 and outputs 5, 7, 9. Which rule matches?**

- A.  $y = x + 5$
- B.  $y = 2x + 5$
- C.  $y = 3x + 2$
- D.  $y = x^2 + 5$

**24.5. In a function table, the first column usually lists:**

- A. outputs
- B. inputs
- C. slopes
- D. intercepts

**25.2. If you want the output when  $x = 0$ , which representation is usually quickest?**

- A. a direct equation rule
- B. a long story problem
- C. a blank graph
- D. a paragraph without numbers

**25.5. If two functions have the same output at one input, that means:**

- A. they are the same function forever
- B. they match at that one input
- C. their slopes are equal
- D. their domains are equal

26. A student says  $h(2 + 1) = h(2) + 1$ . What is wrong?

- A. Function notation means multiply h by the parentheses.
- B. You should always replace h with x.
- C.  $h(2 + 1)$  means  $h(3)$ , so you must evaluate the input first.
- D. The expression has no meaning at all.

26.3. If  $h(x) = x^2 + 1$ , what is  $h(2)$ ?

- A. 3
- B. 4
- C. 5
- D. 6

27. If  $f(x) = 3x - 7$ , find  $f(5)$ . Answer with a number.

27.3. If  $h(x) = x^2 + 1$ , what is  $h(2)$ ?

- A. 3
- B. 4
- C. 5
- D. 6

28. If  $p(x) = x^2 + 1$ , find  $p(-3)$ . Answer with a number.

28.3. If  $h(x) = x^2 + 1$ , what is  $h(2)$ ?

- A. 3
- B. 4
- C. 5
- D. 6

26.1. If  $f(x) = 3x + 2$ , what is  $f(4)$ ?

- A. 10
- B. 12
- C. 14
- D. 18

26.4. If  $r(x) = 7x - 9$ , what is  $r(0)$ ?

- A. -9
- B. 0
- C. 7
- D. 9

27.1. If  $f(x) = 3x + 2$ , what is  $f(4)$ ?

- A. 10
- B. 12
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- A. -9
- B. 0
- C. 7
- D. 9

26.2. If  $g(x) = 5 - 2x$ , what is  $g(-3)$ ?

- A. -1
- B. 11
- C. 1
- D. -11

26.5. If  $s(x) = 2x + 1$ , which is larger?

- A.  $s(1)$
- B.  $s(3)$
- C. they are equal
- D. cannot tell

27.2. If  $g(x) = 5 - 2x$ , what is  $g(-3)$ ?

- A. -1
- B. 11
- C. 1
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28.5. If  $s(x) = 2x + 1$ , which is larger?

- A.  $s(1)$
- B.  $s(3)$
- C. they are equal
- D. cannot tell

29. If  $q(x) = 2x^2 - 1$ , find  $q(2)$ . Answer with a number.

29.1. If  $f(x) = 3x + 2$ , what is  $f(4)$ ?

29.2. If  $g(x) = 5 - 2x$ , what is  $g(-3)$ ?

- A. 10
- B. 12
- C. 14
- D. 18

- A. -1
- B. 11
- C. 1
- D. -11

29.3. If  $h(x) = x^2 + 1$ , what is  $h(2)$ ?

29.4. If  $r(x) = 7x - 9$ , what is  $r(0)$ ?

29.5. If  $s(x) = 2x + 1$ , which is larger?

- A. 3
- B. 4
- C. 5
- D. 6

- A. -9
- B. 0
- C. 7
- D. 9

- A.  $s(1)$
- B.  $s(3)$
- C. they are equal
- D. cannot tell

30. Evaluate  $f(-3)$  if  $f(x) = x^2 + 2x$ . Answer with a number.

30.1. If  $f(x) = 3x + 2$ , what is  $f(4)$ ?

30.2. If  $g(x) = 5 - 2x$ , what is  $g(-3)$ ?

- A. 10
- B. 12
- C. 14
- D. 18

- A. -1
- B. 11
- C. 1
- D. -11

30.3. If  $h(x) = x^2 + 1$ , what is  $h(2)$ ?

30.4. If  $r(x) = 7x - 9$ , what is  $r(0)$ ?

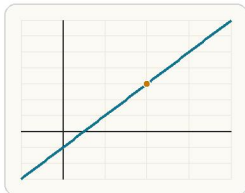
30.5. If  $s(x) = 2x + 1$ , which is larger?

- A. 3
- B. 4
- C. 5
- D. 6

- A. -9
- B. 0
- C. 7
- D. 9

- A.  $s(1)$
- B.  $s(3)$
- C. they are equal
- D. cannot tell

31. What is  $f(2)$  on the graph?



At  $x = 2$ , the line passes through  $y = 3$ .

- A. 1
- B. 5
- C. 3
- D. 7

31.1. If the point  $(2, 5)$  is on the graph of  $f$ , then  $f(2) = ?$

31.2. If  $(3, 7)$  lies on the graph of  $f$ , what does that mean?

- A. 2
- B. 3
- C. 5
- D. 7

- A.  $f(7) = 3$
- B.  $f(3) = 7$
- C. the slope is  $7/3$
- D. the range is 3

31.3. If a graph shows the point  $(4, -1)$ , what is the output when  $x = 4$ ?

31.4. A point on a function graph always tells you:

31.5. On a function graph, the input is usually read on the:

- A. 4
- B. -1
- C. 3
- D. 5

- A. one input-output pair
- B. the slope only
- C. the domain only
- D. the inverse

- A. vertical axis
- B. horizontal axis
- C. midline
- D. slope triangle

32. At  $x = 3$ , which function has the greater output:  
 $f(x) = 2x + 1$  or  $g(x) = x^2$ ?

- A.  $g(x)$
- B.  $f(x)$
- C. They are equal
- D. Cannot tell

32.1. If  $f(x) = 2x + 3$  and  $g(x) = x + 7$ , which function has the greater output at  $x = 4$ ?

- A.  $f$
- B.  $g$
- C. they are equal
- D. cannot tell

32.2. If you want the output when  $x = 0$ , which representation is usually quickest?

- A. a direct equation rule
- B. a long story problem
- C. a blank graph
- D. a paragraph without numbers

32.3. A table gives  $g(2) = 6$  and an equation gives  $f(2) = 5$ . Which output is greater?

- A.  $f$
- B.  $g$
- C. they are equal
- D. cannot tell

32.4. To find one exact output, which is usually most useful?

- A. any representation with the needed input-output information
- B. only a graph
- C. only a table
- D. only words

32.5. If two functions have the same output at one input, that means:

- A. they are the same function forever
- B. they match at that one input
- C. their slopes are equal
- D. their domains are equal