

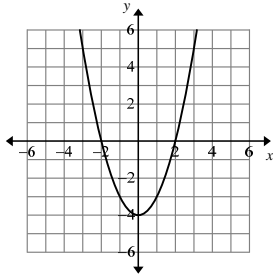
Patterns, Functions, & Relations

Long-Term Memory Review

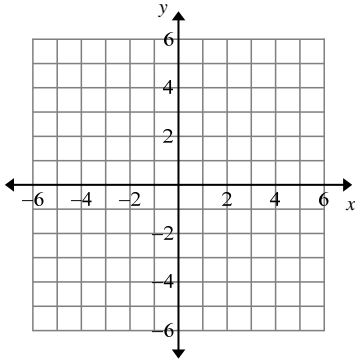
Review 1

1. What are the next three terms in the pattern? 9, 5, 1, -3, ...
2. Fill in the Blank: A function is a relation that has exactly one _____ for every _____.
3. True or False: If the statement is false, rewrite it to make it true.
The output values of a function are called the domain.

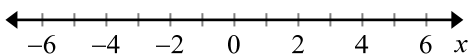
4. Use the Vertical Line Test to determine if the graph below is a function.



5. What is the range of the graph shown in example 4 above?
6. The absolute value of a number is its distance away from the origin on the number line. How many numbers have an absolute value of 3? What are the number(s)?
7. Graph $y = |x|$ on the coordinate grid.



8. Graph the solution of the inequality on the number line. $|x| \leq 3$



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Long-Term Memory Review

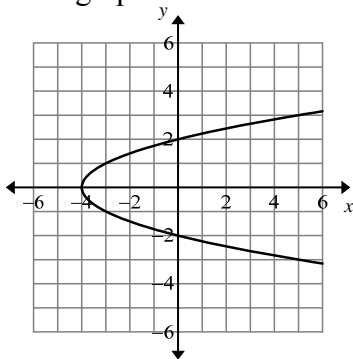
Review 2

1. The first four terms of a sequence are shown below.

$$\frac{1}{3} \quad \frac{1}{8} \quad \frac{1}{16} \quad \frac{1}{27}$$

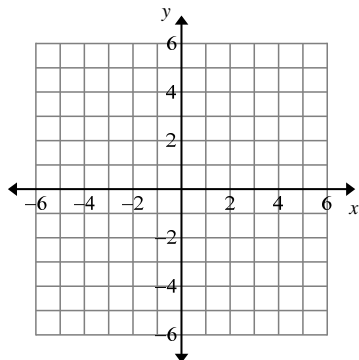
The sequence continues. What is the seventh term of the sequence?

2. Is the statement true or false? If it is false, rewrite it to make it true.
A function is a special relation for which every input has exactly one output.
3. Fill in the Blank: The input values of a function are called the _____, and the output values of a function are called the _____.
4. Explain why the Vertical Line Test will determine if a relation is a function, given the graph.
5. Is the graph shown below a function? What is its domain?



6. Solve the absolute value equation. $|x| - 4 = 1$

7. Graph the absolute value function. $y = |x| + 2$



8. Solve the absolute value inequality. $|x| > 2$

Patterns, Functions, & Relations

Long-Term Memory Review

Review 3

1. The first six terms of a sequence are shown below.

8 17 32 53 80 113

The sequence continues. Which expression represents the n^{th} term of the sequence?

- A. $2n + 1$ B. $9n - 1$ C. $3n^2 + 5$ D. $2n^2 + 3n$

2. Evaluate the function $f(x) = -x^2 + 4$ for $f(-2)$.

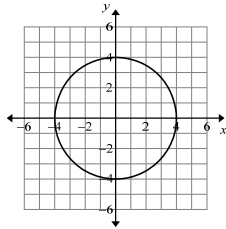
3. A function and its domain are shown below.

$$g(x) = 3x + 1$$

$$\text{Domain: } \{-1, 0, 3\}$$

What is the range of the function?

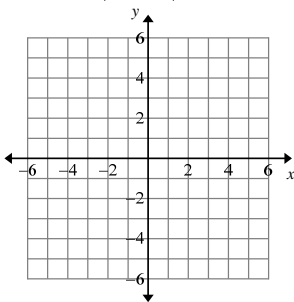
4. Is the relation shown in the graph a function? Explain why or why not. Then state the domain and range.



5. Solve the absolute value equation. $|x - 2| + 1 = 4$

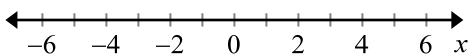
6. Graph the absolute value function. State its domain and range.

$$f(x) = |x - 2|$$



7. Solve the absolute value inequality and graph the solution on the number line.

$$|x + 3| < 2$$



Patterns, Functions, & Relations

Long-Term Memory Review Review 4

1. A pattern of numbers is shown below.

```

      1
     1 1
    1 2 1
   1 3 3 1
  ? ? ? ? ?
 1 5 10 10 5 1
    
```

List the numbers that would complete the missing line.

2. Write a function equation for the ordered pairs given in the table.

x	1	3	5	7	9
y	3	7	11	15	19

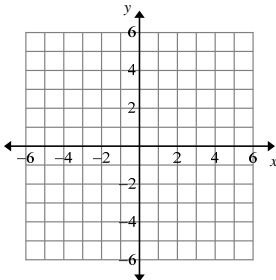
3. A function and its range are shown below.

$$h(x) = 2x - 5$$

$$\text{Range: } \{-1, 1, 3\}$$

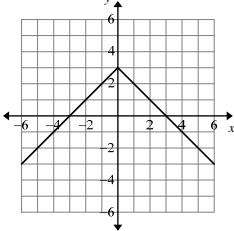
What is the domain of the function?

4. Sketch the graph of $y = 1 - x^2$. State the range of the function.

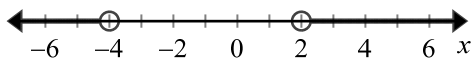


5. Solve the absolute value equation. $|-2x + 1| = 5$

6. Write an equation for the absolute value function shown in the graph below. Then state the domain and range.



7. The graph below represents the solution set of an absolute value inequality.



Write the absolute value inequality.

Patterns, Functions, & Relations

Long-Term Memory Review

Quiz

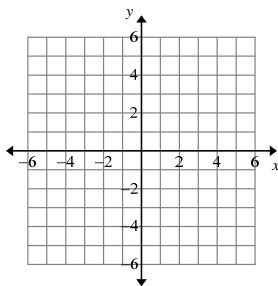
1. The first four terms of a sequence are shown below.

4 9 16 25

The sequence continues. What is the tenth term of the sequence?

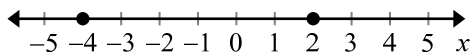
2. Fill in the Blank: The input values of a relation are called the _____ and the output values are called the _____.

3. Graph the absolute value function. $y = |x - 2| + 1$



4. What are the domain and range of the function shown in the graph of example 3 above?

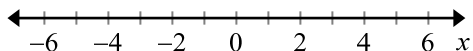
5. The solution of an absolute value equation is shown on the number line below.



Which of these is the equation?

- A. $|x| = 2$ B. $|x| = 4$ C. $|x + 1| = 3$ D. $|x + 4| = 0$

6. Graph the solutions of the absolute value inequality on the number line provided. $|x| \leq 5$



7. What are the solutions of the inequality $|3x - 4| > 5$?

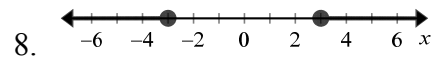
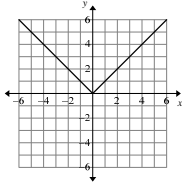
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Long-Term Memory Review

ANSWERS

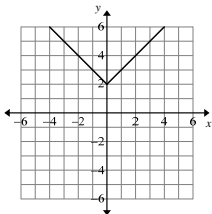
Review 1 – Answers

1. $-7, -11, -15$
2. output; input
3. False: The input values of a function are called the domain. OR The output values of a function are called the range.
4. Yes, it is a function
5. $y \geq -4$
6. Two numbers; $-3, 3$
- 7.



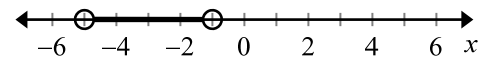
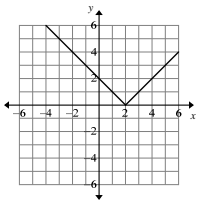
Review 2 Answers

1. $\frac{1}{78}$
2. True
3. domain; range
4. Sample answer: A vertical line has an equation of $x = c$. So if it intersects the graph more than once, then the relation has an input value that goes to more than one output value. Therefore, it is not a function.
5. No; $x \geq -4$
6. $x = -5, 5$
- 7.
8. $x < -2$ or $x > 2$



Review 3 Answers

1. C
2. $f(-2) = 0$
3. $\{-2, 1, 4\}$
4. No, it does not pass the vertical line test. Domain: $-4 \leq x \leq 4$; Range: $-4 \leq y \leq 4$
5. $x = -1, 5$
6. Domain: All real numbers; Range: $y \geq 0$
7. $-5 < x < -1$



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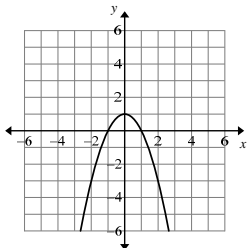
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Review 4 Answers

1. 1, 4, 6, 4, 1

3. $\{2, 3, 4\}$

4. Range: $y \leq 1$



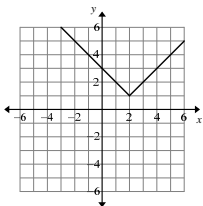
6. $y = -|x| + 3$; Domain: All real numbers; Range: $y \leq 3$

7. $|x + 1| > 3$

Quiz – Answers

1. 121

3.



5. C

6. $x < -\frac{1}{3}$ or $x > 3$

2. $y = 2x + 1$

5. $x = -2, 3$

2. domain; range

4. Domain: All real numbers; Range: $y \geq 1$

