

1. If the sequence continued, what would be the 8th term?
- 0.87, 0.087, 0.0087, 0.00087, . . .
- A 0.0000000087
B 0.0000000087
C 0.000000087
D 0.00000087
2. One number in this sequence is wrong.
- | | | | | | |
|----|----|----|----|----|----|
| 22 | 26 | 30 | 36 | 38 | 42 |
|----|----|----|----|----|----|
- What change should be made to correct this sequence?
- A 26 should be replaced by 24.
B 26 should be replaced by 28.
C 36 should be replaced by 34.
D 42 should be replaced by 40.
3. A radio station will announce the winner of a contest when 3,200 callers have phoned the station. At 3:00 p.m. 400 callers were counted. At 4:00 p.m. 650 calls had been recorded. By 5:00 p.m. 950 calls had come into the station, and by 6:00 p.m. 1,300 calls had been counted. If the pattern continues, when will the radio station announce a winner?
- A 8:00 p.m.
B 9:00 p.m.
C 10:00 p.m.
D 11:00 p.m.
4. Which set of ordered pairs satisfies $y = 2x + 3$?
- A $\{(0, 2), (1, 3), (2, 4)\}$
B $\{(0, 2), (1, 5), (2, 8)\}$
C $\{(0, 3), (1, 4), (2, 5)\}$
D $\{(0, 3), (1, 5), (2, 7)\}$
5. Which set of ordered pairs satisfies the rule “y equals six less than twice x”?
- A $\{(3, 0), (4, 1), (5, 2)\}$
B $\{(3, 0), (4, 2), (5, 4)\}$
C $\{(0, 6), (1, 4), (2, 2)\}$
D $\{(0, 3), (2, 4), (4, 5)\}$

6. Which set of ordered pairs satisfies the rule “the first number is two more than twice the second number”?

A $\{(2, 3), (4, 7), (6, 11)\}$
 B $\{(2, 2), (4, 3), (6, 4)\}$
 C $\{(2, 1), (4, 2), (6, 3)\}$
 D $\{(2, 0), (4, 1), (6, 2)\}$

7. Which of the following are coordinates on the graph of the equation $y = 2x$?

A $(0, 2), (1, 3)$
 B $(1, 3), (3, 6)$
 C $(1, 4), (2, 8)$
 D $(1, 2), (2, 4)$

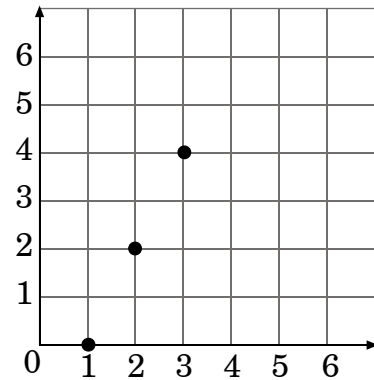
8. There is a relationship between the x -and y -coordinates in the given set of ordered pairs.

$\{(2, 4), (0, 0), (3, 6), (5, 10)\}$

Which of the following describes the relationship?

- A The y -coordinate is 2 more than the x -coordinate.
 B The y -coordinate is multiplied by 2 to get the x -coordinate.
 C The y -coordinate is $\frac{1}{2}$ the x -coordinate.
 D The y -coordinate is twice the x -coordinate.

9. If the pattern on the graph continues, which rule can be used to find the second number in the ordered pair $(5, \underline{\quad})$?



- A multiply the first number by 2, then subtract 2
 B multiply the first number by 3, then subtract 4
 C subtract 1 from the first number
 D subtract 2 from the first number

10. Which rule describes the ordered pairs in this table?

x	y
1	1
2	3
3	5
4	7

- A $y = 2x - 1$
- B $x = 3y - 2$
- C $y = \frac{x}{2} + 2$
- D $x = y - 1$
11. Which rule could be used to generate these ordered pairs?

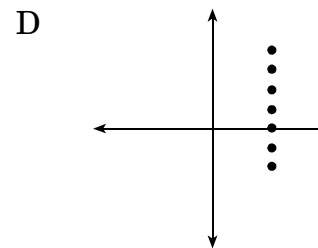
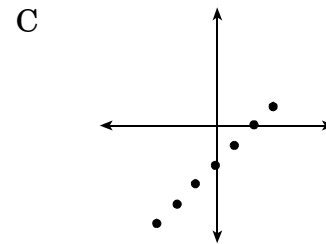
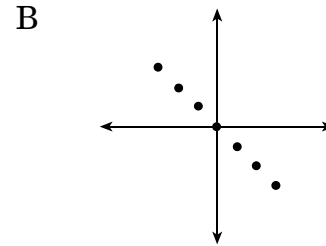
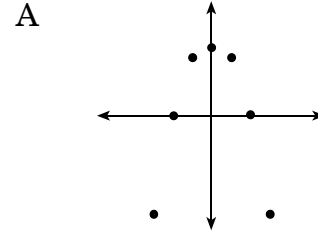
$(4, 7), (6, 13), (8, 19)$

- A $y = x$
- B $y = x + 3$
- C $y = 2x - 1$
- D $y = 3x - 5$
12. Takashi bought 11.9 gallons of gasoline priced at g dollars per gallon, 6 three-liter sodas priced at s dollars per soda and 2 bags of chips priced at c dollars per bag. Which expression represents the total cost of the gasoline, soda, and chips?
- A $(11.9 + g) + (6 + s) + (2 + c)$
- B $11.9 \times g + 18 \times s + 2 \times c$
- C $11.9 \times g + 6 \times s + 2 \times c$
- D $11.9 \times g + s \times (6 + 3) + 2 \times c$
13. Jackie collected 2 less than twice the number of cans Chad collected for recycling. If c represents the number of cans Chad collected, what is an expression for the number of cans collected by Jackie?
- A $2 + 2 \times c$
- B $2 \times c - 2$
- C $c + 2 \times c - 2$
- D $c + 2 \times c$
14. I am an odd number. When I am tripled, I am one more than 20. Which number sentence identifies the odd number, n ?
- A $3 \times n - 1 = 20$
- B $3 \times n + 1 = 20$
- C $2 \times n - 20 = 1$
- D $3 \times n + 20 = 1$

15. The distance to the beach is fifty miles more than twice the distance to the mountains. If d represents the distance to the mountains, which expression represents the distance to the beach?

A $50d$
 B $2d + 50$
 C $50d + 2$
 D $100d + 50$

16. Which graph shows a nonlinear relationship?



17. Which set of ordered pairs represents a linear relationship?

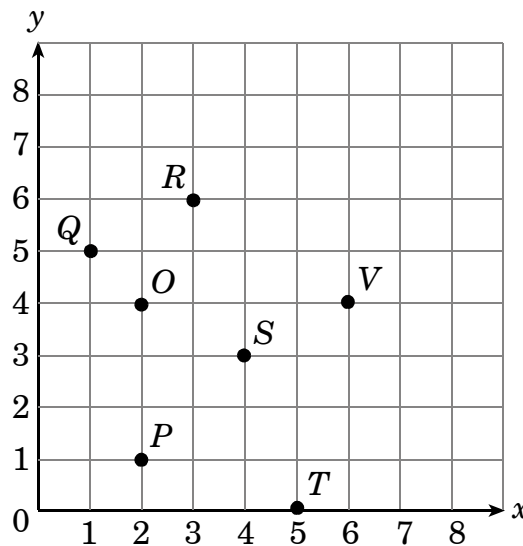
A $\{(0, 1), (0, -1), (-1, 1), (-1, 2)\}$

B $\{(2, 2), (3, 3), (4, 3), (5, 3)\}$

C $\{(-1, -4), (-1, 0), (0, 1), (1, -4)\}$

D $\{(2, 3), (3, 4), (4, 5), (5, 6)\}$

18. Which three points on the grid **best** determine a linear relationship?



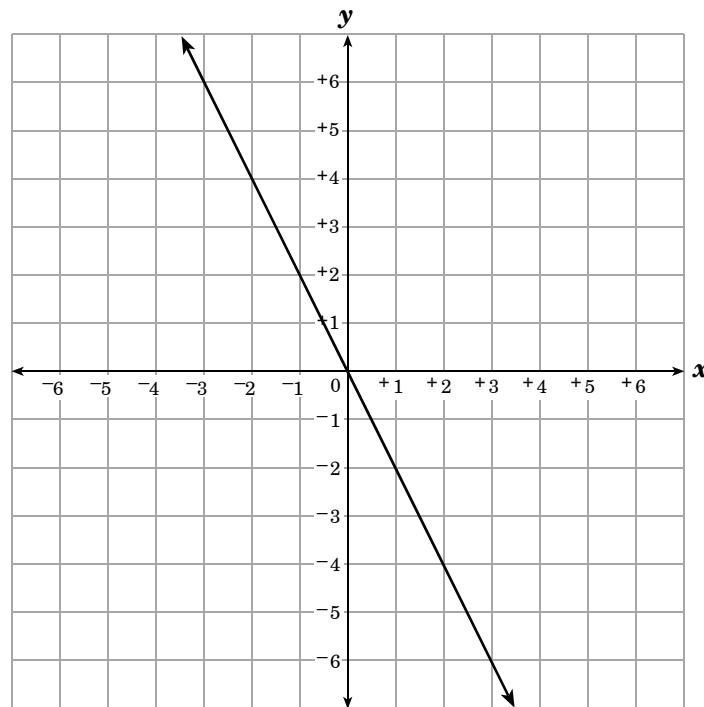
A P, O, R

B P, S, V

C Q, O, S

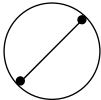
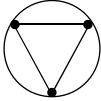
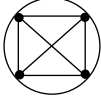

D R, S, T

19. Which of the following points is on the graphed line?



- A $(-3, 6)$
- B $(-2, 3)$
- C $(2, -3)$
- D $(3, -4)$

20. The chart shows the greatest number of line segments that can connect various numbers of points on a circle. How many line segments will connect 8 points?

Figure	Number of Points	Number of Line Segments
	2	1
	3	3
	4	6
	5	10

- A 28
- B 25
- C 21
- D 16
-
21. A bricklayer is making a design in the sidewalk. The sidewalk is 12 bricks wide. The bricklayer puts down 3 rows of red bricks, 1 row of white bricks, 3 rows of red bricks, and so on. If he needs to put down 100 rows of bricks, how many white bricks will he need?
- A 120
- B 240
- C 300
- D 900

22. Square numbers are numbers that can be represented by a square array of blocks.

First four square numbers



Which of the following is a square number?

- A 50
 B 36
 C 27
 D 18
-
23. Eight teachers met at the Annual Mathematics Conference. If each teacher shook the hand of all of the other teachers, how many handshakes took place?
- A 22
 B 26
 C 28
 D 30

End of Goal 3 Sample Items

In compliance with federal law, including the provisions of Title IX of the Education Amendments of 1972, the Department of Public Instruction does not discriminate on the basis of race, sex, religion, color, national or ethnic origin, age, disability, or military service in its policies, programs, activities, admissions or employment.

Answers to EOG Mathematics Grade 6 Sample Items

Goal 3

- 1. Objective 3.01**
Describe, extend and write rules for a variety of patterns.
Thinking Skill: Generating **Correct Answer:** C
- 2. Objective 3.01**
Describe, extend and write rules for a variety of patterns.
Thinking Skill: Analyzing **Correct Answer:** C
- 3. Objective 3.01**
Describe, extend and write rules for a variety of patterns.
Thinking Skill: Generating **Correct Answer:** C
- 4. Objective 3.02**
Generate a set of ordered pairs using a given rule which is stated verbally or algebraically.
Thinking Skill: Analyzing **Correct Answer:** D
- 5. Objective 3.02**
Generate a set of ordered pairs using a given rule which is stated verbally or algebraically.
Thinking Skill: Analyzing **Correct Answer:** B
- 6. Objective 3.02**
Generate a set of ordered pairs using a given rule which is stated verbally or algebraically.
Thinking Skill: Analyzing **Correct Answer:** D
- 7. Objective 3.02**
Generate a set of ordered pairs using a given rule which is stated verbally or algebraically.
Thinking Skill: Analyzing **Correct Answer:** D
- 8. Objective 3.03**
Given a group of ordered pairs, identify either verbally or algebraically the rule used to generate them and record results.
Thinking Skill: Analyzing **Correct Answer:** D
- 9. Objective 3.03**
Given a group of ordered pairs, identify either verbally or algebraically the rule used to generate them and record results.
Thinking Skill: Analyzing **Correct Answer:** A

Answers to EOG Mathematics Grade 6 Sample Items

Goal 3

10. Objective 3.03

Given a group of ordered pairs, identify either verbally or algebraically the rule used to generate them and record results.

Thinking Skill: Analyzing

Correct Answer: A

11. Objective 3.03

Given a group of ordered pairs, identify either verbally or algebraically the rule used to generate them and record results.

Thinking Skill: Analyzing

Correct Answer: D

12. Objective 3.04

Use variables to describe numerical expressions and relationships.

Thinking Skill: Analyzing

Correct Answer: C

13. Objective 3.04

Use variables to describe numerical expressions and relationships.

Thinking Skill: Analyzing

Correct Answer: B

14. Objective 3.04

Use variables to describe numerical expressions and relationships.

Thinking Skill: Analyzing

Correct Answer: A

15. Objective 3.04

Use variables to describe numerical expressions and relationships.

Thinking Skill: Analyzing

Correct Answer: B

16. Objective 3.05

Use graphs and tables to represent ordered pairs; describe the relationship; recognize both linear and nonlinear relationships.

Thinking Skill: Analyzing

Correct Answer: A

17. Objective 3.05

Use graphs and tables to represent ordered pairs; describe the relationship; recognize both linear and nonlinear relationships.

Thinking Skill: Analyzing

Correct Answer: D

18. Objective 3.05

Use graphs and tables to represent ordered pairs; describe the relationship; recognize both linear and nonlinear relationships.

Thinking Skill: Analyzing

Correct Answer: D

Answers to EOG Mathematics Grade 6 Sample Items

Goal 3

19. Objective 3.05

Use graphs and tables to represent ordered pairs; describe the relationship; recognize both linear and nonlinear relationships.

Thinking Skill: Analyzing **Correct Answer:** A

20. Objective 3.06

Identify and use patterning as a strategy to solve problems.

Thinking Skill: Generating **Correct Answer:** A

21. Objective 3.06

Identify and use patterning as a strategy to solve problems.

Thinking Skill: Analyzing **Correct Answer:** C

22. Objective 3.06

Identify and use patterning as a strategy to solve problems.

Thinking Skill: Analyzing **Correct Answer:** B

23. Objective 3.06

Identify and use patterning as a strategy to solve problems.

Thinking Skill: Analyzing **Correct Answer:** C