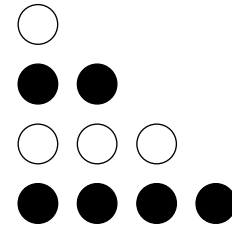


1. What is the rule for this number pattern?
- 1, 1, 2, 6, 24, 120, . . .
- A Add 0, then add 1, then add 2, and so on.
- B Multiply by 1, then multiply by 2, then multiply by 3, and so on.
- C Multiply by 1, then add 1.
- D Multiply by two, then subtract 1.

2. What two numbers will extend the pattern 1, 4, 9, 16, \_\_, \_\_?
- A 25 and 36
- B 26 and 41
- C 27 and 40
- D 28 and 43

3. Which is the next number in this sequence?
- 1, 3, 6, 10, . . .
- A 16
- B 15
- C 14
- D 13

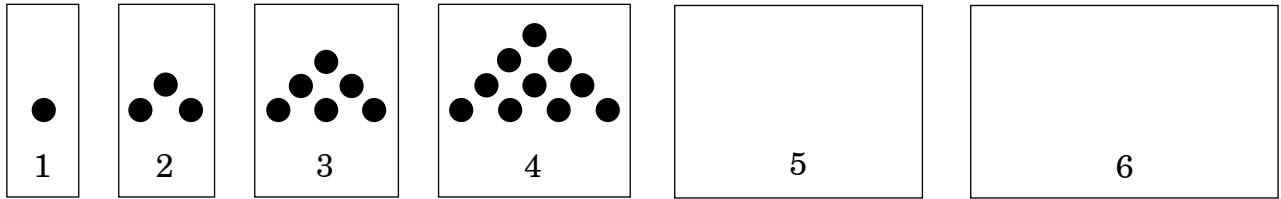
4. Steve created the following pattern:



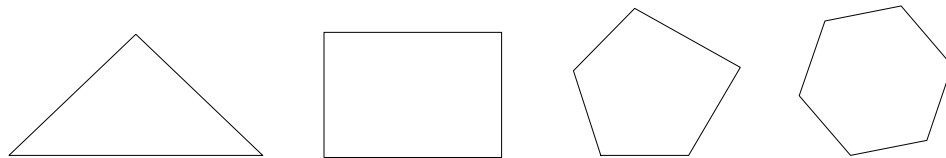
What would the eighth row of this pattern look like?

- A
- B
- C
- D

5. A group of children designed a pattern with dots. How many dots will be in their sixth pattern?



- A 15  
B 17  
C 21  
D 28
- 
6. The shapes below can **best** be described by which of the following patterns?



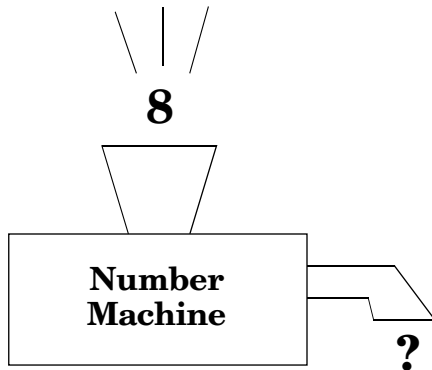
- A Each shape has one angle fewer than the shape before it.  
B Each shape has a longer side than the shape before it.  
C Each shape has the same number of angles as the shape before it.  
D Each shape has one more side than the shape before it.

7. Matt made up a pattern.

1, 4, 10, 22, 46

What rule did Matt's pattern follow?

- A Add three to the number each time.
- B Double the number each time.
- C Multiply the number by two and then add two each time.
- D Multiply the number by itself and then add the number each time.
8. When a number is put into the machine below, a different number comes out.



If a 2 goes in, a 6 comes out.  
 If a 4 goes in, a 12 comes out.  
 If a 5 goes in, a 15 comes out.

If an 8 goes in, what number should come out?

- A 32
- B 24
- C 16
- D 12

9. Which of the following rules could be used to describe the ordered pairs in this series?

(4, 2), (8, 4), (10, 5)

- A The second number is equal to half of the first number.
- B The second number is equal to the first number plus 2.
- C The second number is equal to twice the first number.
- D The second number is equal to the first number minus 2.
10. Danny and Julie have new sticker books. Danny will put 4 stickers in his book every day and Julie will put 6 stickers in her book every day.

Day	Danny	Julie
1	4	6
2	8	12
3	12	18

How many stickers will Danny have when Julie has 30 in her book?

- A 20
- B 24
- C 28
- D 30

11. Based on this table of values, how many textbooks would be in a class of 24 students?

Number of Students	Number of Textbooks
1	6
2	12
3	18
4	24
5	30

- A 4
- B 30
- C 124
- D 144
12. Bert and Chad are eating chocolate candies. Bert eats 4 candies for every 3 that Chad eats. How many candies will Chad have eaten when Bert has eaten 24?
- A 6
- B 12
- C 18
- D 23

13. What number pair comes next in the table?

X	Y
8	2
12	3
16	4
20	5

- A (24, 6)
- B (24, 5)
- C (22, 6)
- D (22, 5)
14. Nora needs 2 eggs for every cake she bakes. Which pair describes cakes and eggs correctly?
- A 2 cakes, 5 eggs
- B 2 cakes, 6 eggs
- C 3 cakes, 5 eggs
- D 3 cakes, 6 eggs

15. There were 20 people at a party. 4 people could sit at 1 table. Which number sentence shows how many tables were needed for the party?

A  $20 - \square = 4$

B  $20 - 4 = \square$

C  $20 \times \square = 4$

D  $4 \times \square = 20$

16. Conrad used a table to show how much money he saved compared to how much money he earned.

<b>Money Earned</b>	7	11	13	18
<b>Money Saved</b>	2	6	8	13

If  $E$  represents the amount of money earned, which number sentence states the rule used to determine the amount Conrad saved?

A  $E - 5$

B  $E + 5$

C  $E \times 5$

D  $E \div 5$

17. Johnny is making model cars. He has 52 car wheels. Each car needs four wheels. Which number sentence could help him determine the total number of cars he can make?

A  $4 + \square = 52$

B  $4 \times \square = 52$

C  $4 \div \square = 52$

D  $52 - \square = 4$

18. Jerome needs to finish reading a 500-page book for a book report. He has already read 335 pages. Which number sentence can be used to find how many more pages Jerome needs to read to finish the book?





A  $500 + 335 = \square$

B  $500 - 335 = \square$

C  $500 \div \square = 335$


D  $335 \times \square = 500$

19. Ginnie used a table of values to help find solutions to problems.

Table of Values	
	= 4
	= 5
	= 6
	= 7

Ginnie wants to solve a problem that uses a symbol not on the table of values:

$$(4 + \text{trapezoid}) \times \square = 60$$

What is the value of  ?

- A 4  
B 5  
C 8  
D 12

## 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 4 Sample Items

### Goal 3

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**1. Objective 3.01**

Identify numerical and geometric patterns by stating their rules; extend the pattern, generalize, and make predictions.

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

**2. Objective 3.01**

Identify numerical and geometric patterns by stating their rules; extend the pattern, generalize, and make predictions.

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

**3. Objective 3.01**

Identify numerical and geometric patterns by stating their rules; extend the pattern, generalize, and make predictions.

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

**4. Objective 3.01**

Identify numerical and geometric patterns by stating their rules; extend the pattern, generalize, and make predictions.

**Thinking Skill:** Generating                      **Correct Answer:** C

**5. Objective 3.01**

Identify numerical and geometric patterns by stating their rules; extend the pattern, generalize, and make predictions.

**Thinking Skill:** Generating                      **Correct Answer:** C

**6. Objective 3.01**

Identify numerical and geometric patterns by stating their rules; extend the pattern, generalize, and make predictions.

**Thinking Skill:** Analyzing                      **Correct Answer:** D

**7. Objective 3.01**

Identify numerical and geometric patterns by stating their rules; extend the pattern, generalize, and make predictions.

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

**8. Objective 3.02**

Identify the pattern by stating the rule, extend the pattern, generalize the rule for the pattern, and make predictions when given a table of number pairs or a set of data.

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

## Answers to EOG Mathematics Grade 4 Sample Items

### Goal 3

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**9. Objective 3.02**

Identify the pattern by stating the rule, extend the pattern, generalize the rule for the pattern, and make predictions when given a table of number pairs or a set of data.

**Thinking Skill:** Analyzing

**Correct Answer:** A

**10. Objective 3.02**

Identify the pattern by stating the rule, extend the pattern, generalize the rule for the pattern, and make predictions when given a table of number pairs or a set of data.

**Thinking Skill:** Applying

**Correct Answer:** A

**11. Objective 3.03**

Construct and order a table of values to solve problems associated with a given relationship.

**Thinking Skill:** Generating

**Correct Answer:** D

**12. Objective 3.03**

Construct and order a table of values to solve problems associated with a given relationship.

**Thinking Skill:** Applying

**Correct Answer:** C

**13. Objective 3.03**

Construct and order a table of values to solve problems associated with a given relationship.

**Thinking Skill:** Generating

**Correct Answer:** A

**14. Objective 3.03**

Construct and order a table of values to solve problems associated with a given relationship.

**Thinking Skill:** Analyzing

**Correct Answer:** D

**15. Objective 3.04**

Use non-numeric symbols to represent quantities in expressions, open sentences, and descriptions of relationships. Determine solutions to open sentences.

**Thinking Skill:** Analyzing

**Correct Answer:** D

**16. Objective 3.04**

Use non-numeric symbols to represent quantities in expressions, open sentences, and descriptions of relationships. Determine solutions to open sentences.

**Thinking Skill:** Analyzing

**Correct Answer:** A

## Answers to EOG Mathematics Grade 4 Sample Items

### Goal 3

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**17. Objective 3.04**

Use non-numeric symbols to represent quantities in expressions, open sentences, and descriptions of relationships. Determine solutions to open sentences.

**Thinking Skill:** Analyzing

**Correct Answer:** B

**18. Objective 3.04**

Use non-numeric symbols to represent quantities in expressions, open sentences, and descriptions of relationships. Determine solutions to open sentences.

**Thinking Skill:** Analyzing

**Correct Answer:** B

**19. Objective 3.04**

Use non-numeric symbols to represent quantities in expressions, open sentences, and descriptions of relationships. Determine solutions to open sentences.

**Thinking Skill:** Analyzing

**Correct Answer:** C