

Grade 3 Math Authentic OAT Questions – 2005, 2006 & 2007 Administration; Practice & Half-Length Test Questions

Patterns, Functions, and Algebra Standard

1. It takes 38 stickers to fill a page. Charlene has 14 stickers. Which number sentence shows how many more stickers she needs to fill the page?

☐ A.  $\triangle ? + 8 = 14$

☐ B.  $14 + \triangle ? = 38$

☐ C.  $14 + 38 = \triangle ?$

2. Find the missing number in the pattern.

750, 775, 800, ?, 850, 875

- ☐ A. 725  
☐ B. 825  
☐ C. 900

3. Write the missing numbers to continue this pattern.

8, 10, 14, 20, \_\_\_\_\_, \_\_\_\_\_

Describe the rule for this pattern.

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4. Marco buys packages of marbles. Each package has 2 red marbles. Which table shows the total number of red marbles Marco will get in one to four packages?

☐ A.

Number of Packages	Total Number of Red Marbles
1	2
2	3
3	4
4	5

☐ B.

Number of Packages	Total Number of Red Marbles
1	2
2	4
3	6
4	8

☐ C.

Number of Packages	Total Number of Red Marbles
1	3
2	6
3	9
4	12

5. Which describes the rule for this pattern?

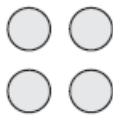
2, 6, 18, 54

- ☐ A. multiply by 3
- ☐ B. multiply by 4
- ☐ C. multiply by 6

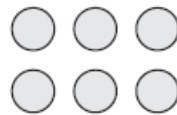
6. Which is a rule for the pattern below?



**Figure 1**



**Figure 2**



**Figure 3**

- ☐ A. Take away two circles.
- ☐ B. Add two circles.
- ☐ C. Add four circles.

7. Which number makes this number sentence true?

$$\boxed{?} + 3 < 15$$

- ☐ A. 5
- ☐ B. 12
- ☐ C. 18

8. Ricky earned \$50 helping his neighbors. He spent \$4 each week for snacks from the money he earned.

How much money did Ricky have left after five weeks?

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Use pictures, words or numbers to show how you found the amount of money Ricky had left after five weeks.

9. Sam and his mom put pennies into his bank and wrote the amount in this table.

Complete the table by continuing the pattern.

**Money Saved**

Sam	Mom
5¢	10¢
6¢	12¢
7¢	14¢
8¢	
9¢	
10¢	
11¢	

Describe the rule for this pattern.

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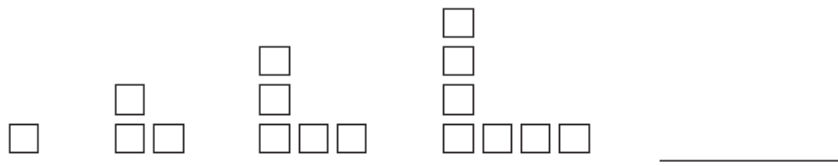
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10. A tomato plant is 7 inches tall. It grows 2 inches each week. How tall will the tomato plant be at the end of 3 weeks?
- ☐ A. 9 inches
- ☐ B. 10 inches
- ☐ C. 13 inches

11. André made this pattern of figures with tiles.



How many tiles would be in the next figure?

- ☐ A. 8
  - ☐ B. 9
  - ☐ C. 10
12. Which number makes this statement true?

$$\triangle - 8 = 13$$

- ☐ A. 5
  - ☐ B. 21
  - ☐ C. 84
13. Monica had 18 books. She shared some books with a friend and had 12 books left.

Which number sentence could be used to find the number of books Monica shared?

- ☐ A.  $18 - n = 12$
- ☐ B.  $12 - 18 = n$
- ☐ C.  $18 + 12 = n$

14. Which number makes this number sentence true?

$$\triangle ? - 9 > 4$$

- ☐ A. 12
- ☐ B. 13
- ☐ C. 16
15. What is the rule for this input-output table?

Input	Output
3	12
5	20
8	32

- ☐ A. Multiply by 4.
- ☐ B. Multiply by 5.
- ☐ C. Multiply by 6.

16.

Write the missing numbers to continue this pattern.

15, 17, 19, 21, \_\_\_\_\_, \_\_\_\_\_

Describe the rule for this pattern.

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17.

Donte grew 12 bean plants. Katie grew 17 bean plants. Which number sentence shows how to find the total number of plants they grew?

☐ A.  $12 + 17 = \boxed{?}$

☐ B.  $\boxed{?} - 17 = 12$

☐ C.  $17 + 17 = \boxed{?}$

18. Which number makes this number sentence true?

$$14 + \triangle ? = 21$$

☐ A. 7

☐ B. 14

☐ C. 35



19. Laura baked 36 cookies. Her brother Sam ate  $n$  cookies.

Which expression represents the number of cookies Laura has left?

- ☐ A.  $n - 36$   
☐ B.  $36 - n$   
☐ C.  $36 \div n$

20. What number comes next in this pattern?

30, 45, 60, 75, 

?
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Describe the rule.

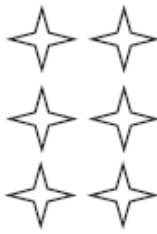
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21. A pattern is shown.



**Figure 1**



**Figure 2**



**Figure 3**

How many stars will Figure 4 have?

- ☐ A. 4
  - ☐ B. 9
  - ☐ C. 12
22. A table is shown.

Input	Output
10	12
8	10
5	7
3	5

Which rule was used to find the output for each input?

- ☐ A. add 2 to input
- ☐ B. multiply input by 2
- ☐ C. subtract 2 from input