

35

Patterns

P.1.A P.1.B

Example

Look at this number pattern.

3, 6, 9, 12, 15, ...

What is the seventh number in this pattern?

- A. 18
- B. 21
- C. 24
- D. 27

Example

What is the next number in this pattern?

2, 4, 8, 16, 32, ...

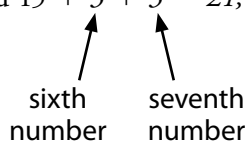
- A. 40
- B. 48
- C. 64
- D. 96

Thinking It Through

Solve —*Look for a Pattern* Determine the pattern's rule. Since the numbers increase, check to see if it is an addition pattern first. You can use subtraction to determine the pattern:

$$15 - 12 = 3; 12 - 9 = 3; 9 - 6 = 3; 6 - 3 = 3$$

The rule is to *add 3*. The first 5 numbers are given, so to find the seventh number, add $15 + 3 + 3 = 21$, *answer B*.

**Thinking It Through**

Solve —*Look for a Pattern* Determine the pattern's rule. You can see that the numbers increase by different amounts, so it may be a multiplication pattern. Use division to determine the pattern:

$$32 \div 16 = 2; 16 \div 8 = 2; 8 \div 4 = 2; 4 \div 2 = 2$$

The rule is to *multiply by 2*. To find the next number in the pattern, multiply $32 \times 2 = 64$, *answer C*.

Review

- A **pattern** is a series of numbers or figures that follows a rule. A pattern's rule can consist of one or more operations.
- A rule must work for every value in the pattern.
- You can often determine the rule for a pattern by subtracting one number from the next, or dividing one number by the previous.

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Directions: Carefully read each question. Circle the letter of the correct answer.

1. What is the next number in the pattern?

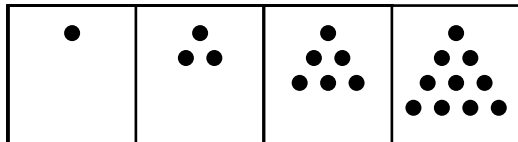
8, 14, 20, 26, ...

- A. 32
- B. 34
- C. 38
- D. 46



Find the rule of the pattern to extend it.

2. How many dots are in the sixth figure in this pattern?



- A. 15
- B. 20
- C. 21
- D. 22

3. What is the rule of this pattern?

1, 4, 16, 64, 256, ...

- A. add 3
- B. add 4
- C. multiply by 2
- D. multiply by 4

4. What is the rule of this pattern?

1, 2, 4, 7, 11, 16, ...

- A. multiply by 2 and subtract 1
- B. The difference between terms increases by 1 each time.
- C. subtract 1 and multiply by 2
- D. The difference between terms doubles each time.



The rule must work for *each* number in the pattern.