1. Matt made up a pattern.

    1, 4, 10, 22, 46
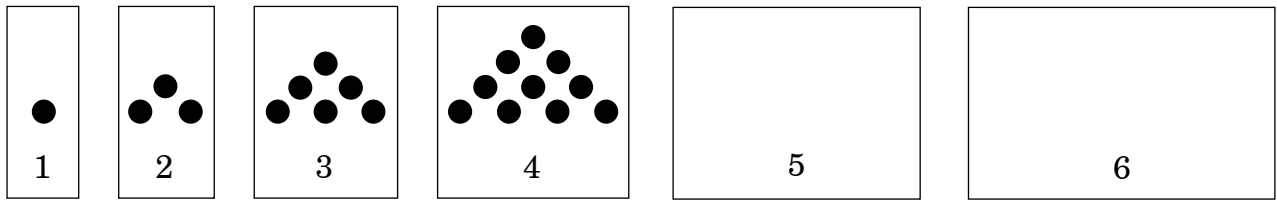
    What is the rule for Matt's pattern?

    A   multiply the number by two and then add two each time

    B   multiply the number by itself and then add the number each time

    C   add three to the number each time

    D   double the number each time

2. 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 2, then subtract 1

3. Which set of numbers follows the same pattern rule as 17, 19, 21, 23, 25?

    A   1, 2, 3, 4, 5

    B   1, 3, 5, 7, 8

    C   1, 3, 5, 7, 9

    D   1, 3, 5, 6, 7

4.   A group of children designed a pattern with dots.
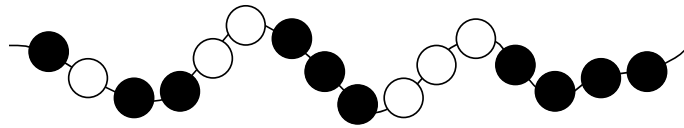

How many dots will be in the sixth box of their pattern?

A   15

B   17

C   21

D   28

___

5.   If the pattern continues, how many toothpicks are needed to make the figure with six triangles?

Number of Triangles	Figure	Number of Toothpicks
1	1	3
2	1 2	5
3	1 2 3	7
4	1 2 3 4	9
5		
6		

A   11

B   13

C   15

D   17

6.   Tonya is making a bracelet.

Her pattern continues until it ends with 5 white beads. What is the total number of beads needed to make the bracelet?

A   21

B   30

C   35

D   40

___

7.   Josh's relatives take a family picture each time they meet at the beach. Pictures were taken in these years:

1977,   1981,   1985,   1989

If this pattern continued, when were the next three pictures taken?

A   1993, 1997, 2001

B   1991, 1993, 1995

C   1993, 1999, 2001

D   1991, 1993, 1997

8.   Carlos put 48 cookies into 8 equal
      rows. Which equation shows that N is
      equal to the number of cookies in each
      row?

      A $N + 8 = 48$

      B $N \times 48 = 8$

      C $48 \times 8 = N$

      D $48 \div 8 = N$

9.   Dana, Joy, and Puja shared their
      compact discs (CDs) so that each girl
      got 12 CDs. Which equation can be
      used to determine how many CDs
      there were in all?

      A $\square = 12 \div 3$

      B $\square = 12 - 3$

      C $\square = 12 + 3$

      D $\square = 12 \times 3$

10.   What is the value of the unknown in
      the number sentence $9 = \square \div 4$?

      A   45

      B   36

      C   32

      D   5

11.   What value will complete the
      equation?

      $$13 + \square = 6 \times 7$$

      A   39

      B   31

      C   29

      D   19

12.   What is the value of N?

      $$5,496 + N = 7,006$$

      A   2,510

      B   2,490

      C   1,610

      D   1,510

13.   In which number sentence is the
        value of $\triangle$ equal to 9?

        A $64 \div \triangle = 7$

        B $\triangle \div 9 = 11$

        C $12 \times \triangle = 108$

        D $\triangle \times 11 = 118$

End of Goal 5 Sample Items

1   **Objective: 5.01**
           Describe and extend numeric and geometric patterns.
           Thinking Skill: Analyzing   **Correct Answer:**   A

2   **Objective: 5.01**
           Describe and extend numeric and geometric patterns.
           Thinking Skill: Analyzing   **Correct Answer:**   B

3   **Objective: 5.01**
           Describe and extend numeric and geometric patterns.
           Thinking Skill: Applying   **Correct Answer:**   C

4   **Objective: 5.02**
           Extend and find missing terms of repeating and growing patterns.
           Thinking Skill: Applying   **Correct Answer:**   C

5   **Objective: 5.02**
           Extend and find missing terms of repeating and growing patterns.
           Thinking Skill: Applying   **Correct Answer:**   B

6   **Objective: 5.02**
           Extend and find missing terms of repeating and growing patterns.
           Thinking Skill: Applying   **Correct Answer:**   B

7   **Objective: 5.02**
           Extend and find missing terms of repeating and growing patterns.
           Thinking Skill: Applying   **Correct Answer:**   A

8   **Objective: 5.03**
           Use symbols to represent unknown quantities in number sentences.
           Thinking Skill: Applying   **Correct Answer:**   D

9   **Objective: 5.03**
           Use symbols to represent unknown quantities in number sentences.
           Thinking Skill: Applying   **Correct Answer:**   D

10   **Objective: 5.04**
           Find the value of the unknown in a number sentence.
           Thinking Skill: Applying   **Correct Answer:**   B

11   **Objective: 5.04**
           Find the value of the unknown in a number sentence.
           Thinking Skill: Applying   **Correct Answer:**   C

12   **Objective:**   **5.04**
Find the value of the unknown in a number sentence.
Thinking Skill: Applying   **Correct Answer:**   D

13   **Objective:**   **5.04**
Find the value of the unknown in a number sentence.
Thinking Skill: Applying   **Correct Answer:**   C