Some More Patterns in Numbers

A. Choose the Correct Answer:

1. What is the next number in the pattern: 2, 6, 12, 20, 30, ___?

a) 40 b) 42

c) 44 d) 46

2. If a pattern follows the rule multiply by 2 and add 3, what comes after 5, 13, 29, 61, ___?

a) 125 b) 120

c) 126 d) 123

3. Identify the correct pattern in the following numbers: 1, 4, 9, 16, 25, 36, ___?

a) 42 b) 48

c) 49 d) 50

B. Write the Missing Terms to Complete the Sentences:

1. The next two numbers in the pattern 100, 95, 85, 70, 50, ___, ___ are ____, ____.
2. The pattern of squares of natural numbers is given by 1, 4, 9, 16, 25, 36, ___. The missing number is ____.
3. The pattern 3, 6, 12, 24, 48, ___, ___ follows the rule ____.
4. In the pattern 81, 72, 63, 54, ___, ___, each number is decreasing by ____.
5. If a number pattern follows the rule "multiply by 3 and subtract 2", then the next term after 7 is ____.

C. Mark each sentence with a True (✓) or False (✗):

1. The sequence 1, 8, 27, 64, 125, 216 follows the pattern of cube numbers. ☐
2. The pattern 2, 4, 8, 16, 32, 64, 128 is formed by adding 2 to each term. ☐
3. In the sequence 5, 10, 20, 40, 80, each term is doubled from the previous term. ☐
4. The next term after 13, 17, 19, 23, and 29 is 33. ☐
5. The pattern 50, 45, 40, 35, 30 follows the rule "subtracting 5 from each term." ☐

D. Figure out the answers to these questions:

1. **Complete the pattern:**
   a) 121, 144, 169, 196, ___, ___
   b) 1, 3, 7, 15, 31, ___, ___
2. **Find the next two terms of the Fibonacci sequence:** 1, 1, 2, 3, 5, 8, 13, ___, ___
3. **Identify the mistake in the pattern and correct it:** 2, 5, 10, 17, 26, 38, 50
4. **Write the rule followed in this pattern:** 2, 5, 10, 17, 26, 37, 50
5. **Find the missing number in the following pattern:** 3, 6, 11, ___, 27, 38

E. Challenge yourself with these questions:

1. **A pattern follows this rule:** "Start with 4, multiply by 2, and subtract 1 each time." Write the first 6 terms.
2. **Find the general rule for the pattern:** 1, 4, 9, 16, 25, 36, ...
3. **A train starts from a station and the number of people in the train follows a pattern:** 5, 15, 30, 50, __, __. Find the next two numbers.