

Four Sample Questions

1. The difference between the sum of 25 consecutive integers and the sum of the 10 consecutive integers that precede them is 1900. Find the largest of these numbers.

(A) 93 (B) 95 (C) 126 (D) 127 (E) 129

2. How many three-digit numbers with exactly two repeating digits are a multiple of nine?

(A) 36 (B) 21 (C) 20 (D) 18 (E) 12

3. Each side of a regular hexagon is 4 cm long. The midpoints of the sides are joined consecutively to form another hexagon. This process is continued forever. Determine the number of square centimeters in the total area of this infinite number of hexagons including the original one.

(A) $8\sqrt{3}$ (B) $24\sqrt{3}$ (C) $42\sqrt{3}$ (D) $72\sqrt{3}$ (E) $96\sqrt{3}$

4. What is the sum of the rational values of x that satisfy the following equation:

$$(x^2 + 4x + 3)^{(x^2 + 4x + 3)} = (x^2 - 3x - 4)^{(x^2 - 3x - 4)}$$

(A) 1 (B) 0 (C) -1 (D) -3 (E) -4