Problem F6102
Summation of Function Value

You are given a complicated function $f : \mathbb{Z}^+ \to \mathbb{Z}^+$ and an positive integer n.

$$f(x) = \begin{cases} 10, & \text{if } x = 1 \\ x^2, & \text{if } x > 1 \text{ and } x \text{ is a prime} \\ 2\sqrt{x} + 1, & \text{if } x > 1 \text{ and } x \text{ is a square number} \\ \lfloor \sqrt{x} \rfloor, & \text{otherwise} \end{cases}$$

Compute the summation $\sum_{i=1}^{n} f(i)$.

Input

The input consist of a single integer $n(1 \leq n \leq 100)$.

Output

Output the value of desired summation.

Sample Input

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6
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Sample Output

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55
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Explanation of Sample Data

The value of $f(1)$ is 10. For primes 2,3,5 there respective function $f(2), f(3), f(5)$ should be there square 4,9,25.

The integer 4 is a square number, and it's square root is 2. So the function value $f(4) = 2 * 2 + 1$ should be 5.

The integer 6 is neither a prime nor a square number, and $\sqrt{6}$ is between 2 and 3. So the function value $f(6) = \lfloor \sqrt{6} \rfloor$ should be 2.

The final summation will be 55.