Problem of the Week
Problem E
Nested Squares

The prime factorization of 20 is $2^2 \times 5$.

The number 20 has 6 positive divisors. They are:

$$2^0 5^0 = 1, \ 2^0 5^1 = 5, \ 2^1 5^0 = 2, \ 2^1 5^1 = 10, \ 2^2 5^0 = 4, \ 2^2 5^1 = 20$$

Two of the divisors, 1 and 4, are perfect squares.

How many positive divisors of 2025^{2025} are perfect squares?