Adding 2 Consecutive Square Numbers:

A. From algebra we know:

$$a^2 + (a+1)^2 = 2(a)(a+1) + 1$$

B. This works for any consecutive squares. However if one of the squares is a multiple of 5, the problem becomes very simple:

$$a^2 + (a+1)^2 = 10 \left[\frac{(a)(a+1)}{5}\right] + 1$$

C. In other words, the answer always ends in a 1. And you can divide one of the numbers by 5 and multiply by the other to get the first part of the answer.

D. Examples:

   Ex [1] $35^2 + 36^2 =$ _____

       a. Write down 1.

       b. $35 \div 5 = 7$. $7 \times 36 = 252$. Write 252.

       c. The answer is 2521.

   Ex [2] $55^2 + 54^2 =$ _____

       a. Write down 1.

       b. $55 \div 5 = 11$. $11 \times 54 = 594$. Write 594. *See Multiplying By 11*.

       c. The answer is 5941.