Adding Squared Numbers In The Form: $(10a + b)^2 + [10(b-1) + (10-a)]^2$

A. This method is simple once we reduce this form:

$$(10a + b)^2 + [10(b-1) + (10-a)]^2 = 101(a^2 + b^2)$$

B. Using numbers instead of variables we get the following:

1. Square the one's digit on the left number.
2. Square the ten's digit on the left number.
3. Add the result of step 1 and step 2.
4. Multiply the result of step 3 by 101 for the answer. See *Multiplying by 101*.

C. This method is sometimes hard to recognize. If the inside numbers subtract to 1 and the outside numbers add to 10 then you can use this method.

Ex [1] $43^2 + 26^2 =$_________.

a) $3^2 + 4^2 = 9 + 16 = 25$.

b) 25 x 101 = 2525.

c) The answer is 2525.

Ex [2] $65^2 + 57^2 =$_________.

a) If you look at this equation it does not fit the pattern. But if you switch the two numbers it does. So think of this as being $57^2 + 65^2$.

b) $5^2 + 7^2 = 25 + 49 = 74$.

c) 74 x 101 = 7474.

d) The answer is 7474.