Multiplying 2 Numbers Whose Ten's Digits Are The Same And Whose One's Digits Add To 5:

A. From algebra we learn:

$(10a + b)\ (10a + (5-b)) =$

1. $100(a^2 + {}^{a}/_{2}) + 10(0) + b(5-b)$, if a is even
2. $100(a^2 + {}^{a-1}/_{2}) + 10(5) + b(5-b)$, if a is odd

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

1. Multiply the one's digits. Write this down.
2. If a is even, write 0. If a is odd, write 5.
3. If a is even, add ${}^{a}/_{2}$ to a^2. Write this value down.
4. If a is odd, add ${}^{a-1}/_{2}$ to a^2. Write this value down.

C. Examples:

Ex [1] 41 x 44 = _____

a. Multiply 1 x 4 = 4. Write down 4.

b. Since a=4 is even, write 0.

c. Add $4^2 + {}^{4}/_{2} = 18$. Write 18.

d. The answer is 1804.

Ex [2] 132 x 133 = _____

a. Multiply 2 x 3 = 6. Write 6.

b. Since 13 is odd, write 5.

c. Add $13^2 + {}^{13-1}/_{2} = 169 + 6 = 175$.

d. The answer is 17556.

D. This trick works, but only if the last numbers add to 5. For a more general formula I suggest using *Multiplying 2 Numbers With The Same Ten's Digit*.