**GROUP 5**

**DIAGONAL METHOD**

**Example 1**

**Perform a multiplication of the factors: 27x48=?**

Let’s write first factor in a way that both digits are separated from each other, like that:

2 7

Secondly, let’s write our second factor in a way that both digits are separated from each other BUT perpendicularly, like that:

2 7

 4

 8

Now, let’s draw two columns, one for each digit in first factor, and two lines, one for each digit in the second factor, like that:

2 7 2 7

 4 4

 8 8

Another thing to do, is to draw diagonals in each of the resulting four little squares, like that:

 2 7

 4

 **8**

Now, we perform a multiplication of the factors by multiplying every digit with every digit, that way:

 2 7 7x4= 28, 2x4= 8, 7x8= 56, 2x8= 16

 4

 8

The last thing to do is to add all of the digits from each diagonal and to read the final number.

 2 1 7 1

 **1** 4

 **2** 8

 **9** **6**

In the units diagonal we have only six, so we write it underneath.

In the tens diagonal we have three digits. We sum it up. The result is 19. We write 9 underneath and rewrite the number of tens above the hundreds diagonal.

In the hundreds diagonal we have another three digits plus digit 1 that we have written earlier. We sum it up and do exactly the same thing. The result is 12. We write 2 underneath and rewrite the number of hundreds above the thousands diagonal.

In the thousands diagonal we have only 1, written earlier. We write it underneath.

The final result is: 27x48= 1296

**SUMMATION**

**To perform a multiplication of the factors you should:**

1. Draw a column for all of the digits from first factor and line for all of the digits from second factor.
2. In each resulting square make a diagonal.
3. Perform a multiplication by multiplying every digit with every digit.
4. Add all of the digits in each diagonal and write resulting digits underneath.

**EXERCISES**

Perform a multiplication of the factors: 23x12=? , 13x36=? , 45x77=?