Difference Of Two Squares $(a^2 - b^2)$:

A. This method is often used in two different ways but each way is very easy to learn. Both ways use the following rule from algebra:

$$a^2 - b^2 = (a + b)(a - b)$$

B. The first way is using the form: $(a^2 - b^2)$.

1. Add the two numbers together.
2. Subtract the right number from the left number.
3. Multiply these two values together for the answer.

Ex [1] $29^2 - 21^2 =$_____.

a) $29 + 21 = 50$.

b) $29 - 21 = 8$.

c) $8 \times 50 = 400$.

d) The answer is 400.

Ex [2] $12^2 - 88^2 =$_____.

a) $12 + 88 = 100$.

b) $12 - 88 = -76$.

c) $-76 \times 100 = -7600$.

d) The answer is -7600.

C. Sometimes you see two numbers multiplied together that are in this form : $(a+b)(a- b)$. Two numbers in this form can be difficult to recognize so look carefully before deciding what method to use.

1. If you see numbers in this form simply use $a^2 - b^2$.

Ex [1] $(40 + 3)(40 - 3) =$_____.

a) $40^2 - 3^2 = 1600 - 9 = 1591$.

b) The answer is 1591.

Ex [2] $19 \times 21 =$_____.

a) Think of this as being $(20 - 1) \times (20 + 1)$.

b) $20^2 - 1^2 = 400 - 1 = 399$.

c) The answer is 399.

Ex [3] 13 x 19 =_____.

a) Think of this as being (16 – 3) x (16 + 3).

b) $16^2 – 3^2 = 256 – 9 = 247$.

c) The answer is 247.