

Risp 3: Brackets Out, Brackets In

Pick three different integers between -4 and 4 inclusive.

(0 is not allowed!)

Replace the squares below
with your three numbers in some order (no repeats!)

$$(x + \square)(\square x + \square)$$

How many different orders are there?

Write down all these expressions, then...
multiply them all out, then...
add all the results together.

Now take this sum: can you factorise it?

Compare notes with your colleagues
once you have tried to do this.
Do you notice anything?

Does it matter what the starting list of numbers is?

Can you make any conjectures?

Can you prove these?

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