

## STICKY NUMBERS (Answer)

Look at the following row of numbers:

10 15 21 4 5

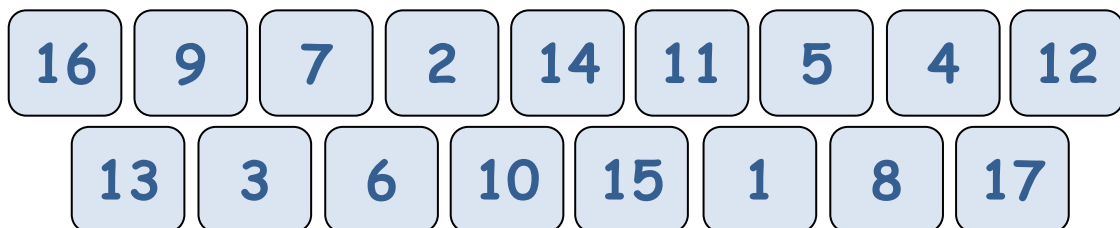
They are arranged so that each pair of adjacent numbers adds up to a square number:

$$10 + 15 = 25 \quad 15 + 21 = 36 \quad 21 + 4 = 25 \quad 4 + 5 = 9$$

Can you arrange the numbers 1 to 17 in a row in the same way, so that each adjacent pair adds up to a square number?

Can you arrange them in more than one way? If not, can you justify that your solution is unique?

Answer:



There is only one solution because 17 can only be paired with 8 to make 25 so has to be at one end. It doesn't matter which end it is at as all the numbers add up the same if you just swap them around.

Notice that the square numbers produced form a pattern:

25 16 9 16 25 16 9 16 25 16 9 16 25 16 9 25