How many square numbers can you make by adding prime numbers together?

Here's one to get you started:

$2 + 2 = 4$

Solutions include:

$2 + 2 = 4$

$2 + 7 = 9$

$11 + 5 = 16$

$23 + 2 = 25$

$29 + 7 = 36$

Julian thinks that 4^2 is equal to 16
Do you agree?

Convince me.

He also thinks that 6^2 is equal to 12

Do you agree?

Explain what you have noticed.

Julian is correct because 4^2 means 4x4 and 4x4 is 16.

On this question Julian is not correct.

6^2 means 6x6 which is 36.

I think Julian has done 6x2 instead of 6x6 here.

Always, Sometimes, Never:

A square number has an even number of factors.

Never. Square numbers always have an odd amount of factors.

Often we work out factors in pairs, but in a square number, one of these factor pairs is always one number repeated.

For example, if we take the number25. The factor pairs are:

1x25

5x5

The factors are 1, 5 and 25, so there are 3 factors and 3 is odd.