

Square numbers

and

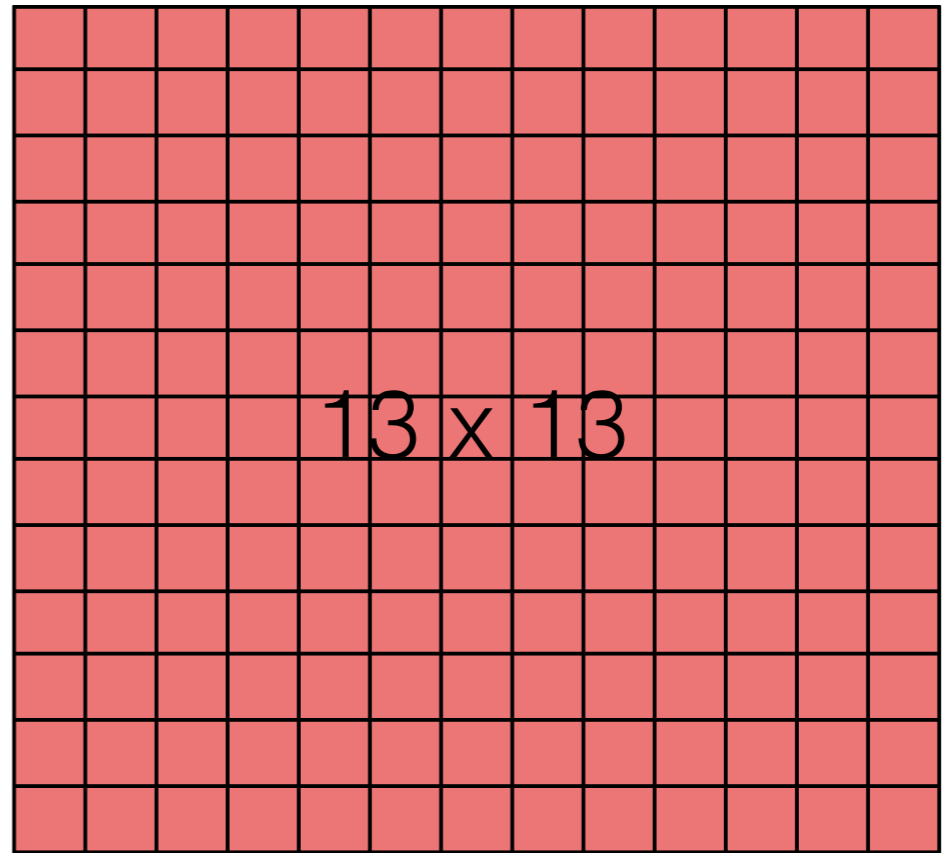
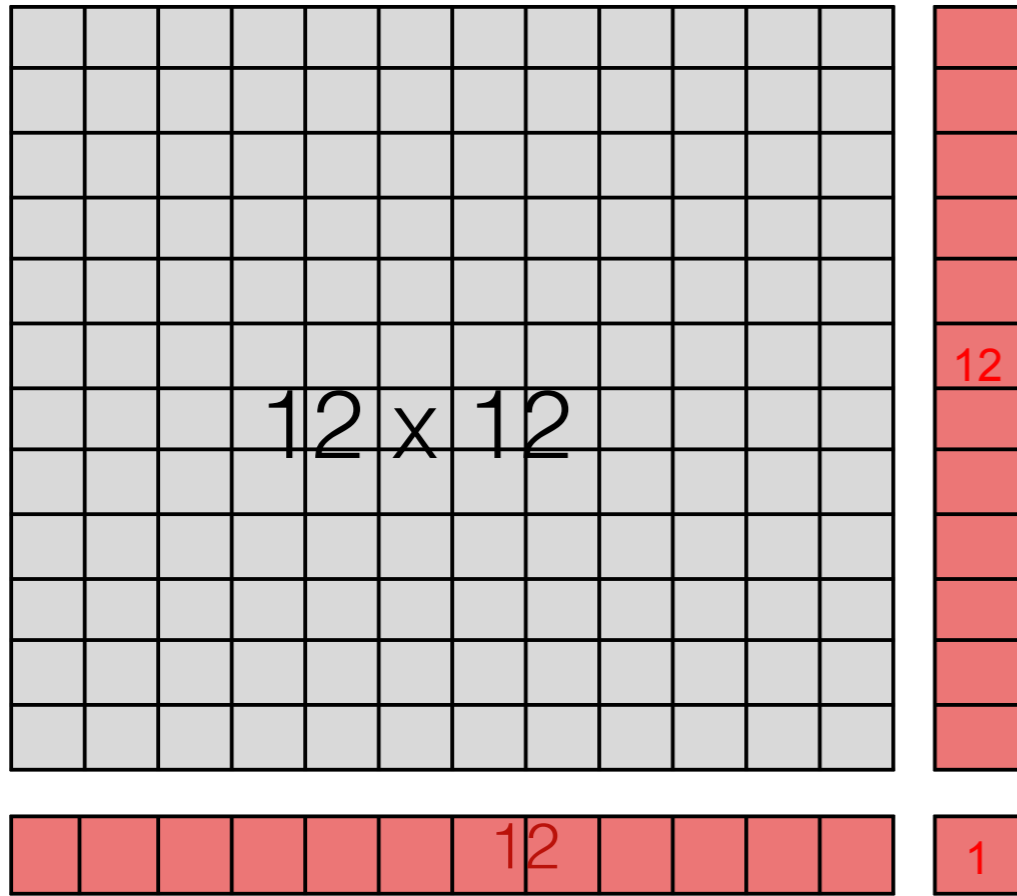
Pythagorean Tipples

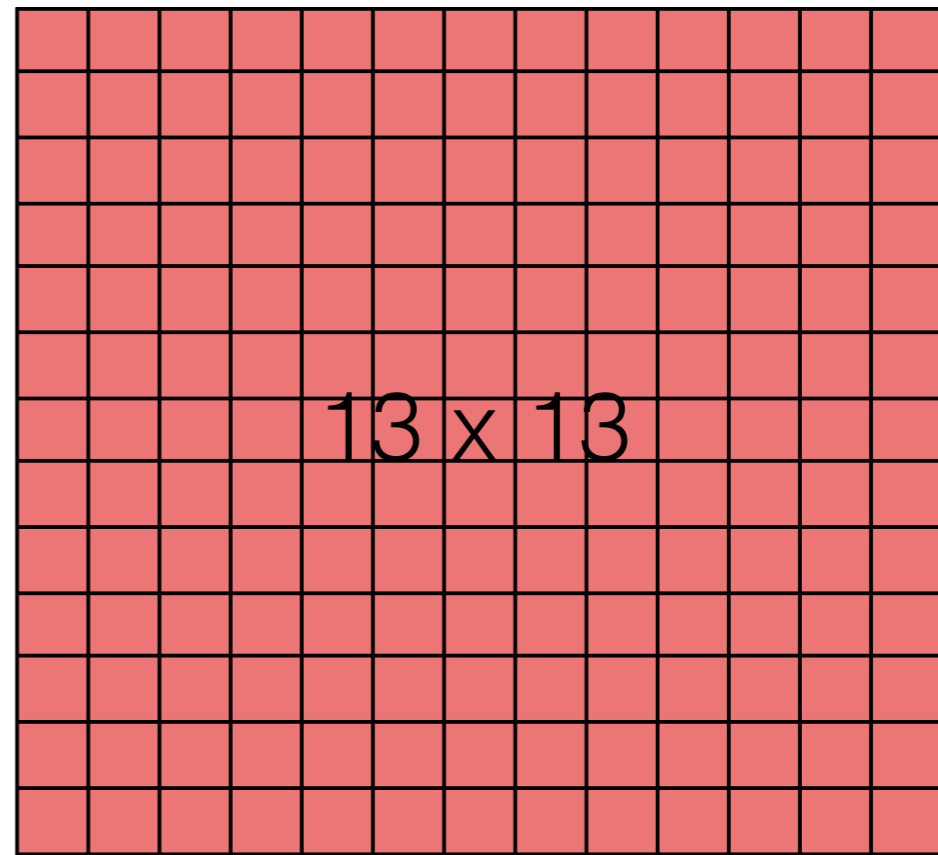
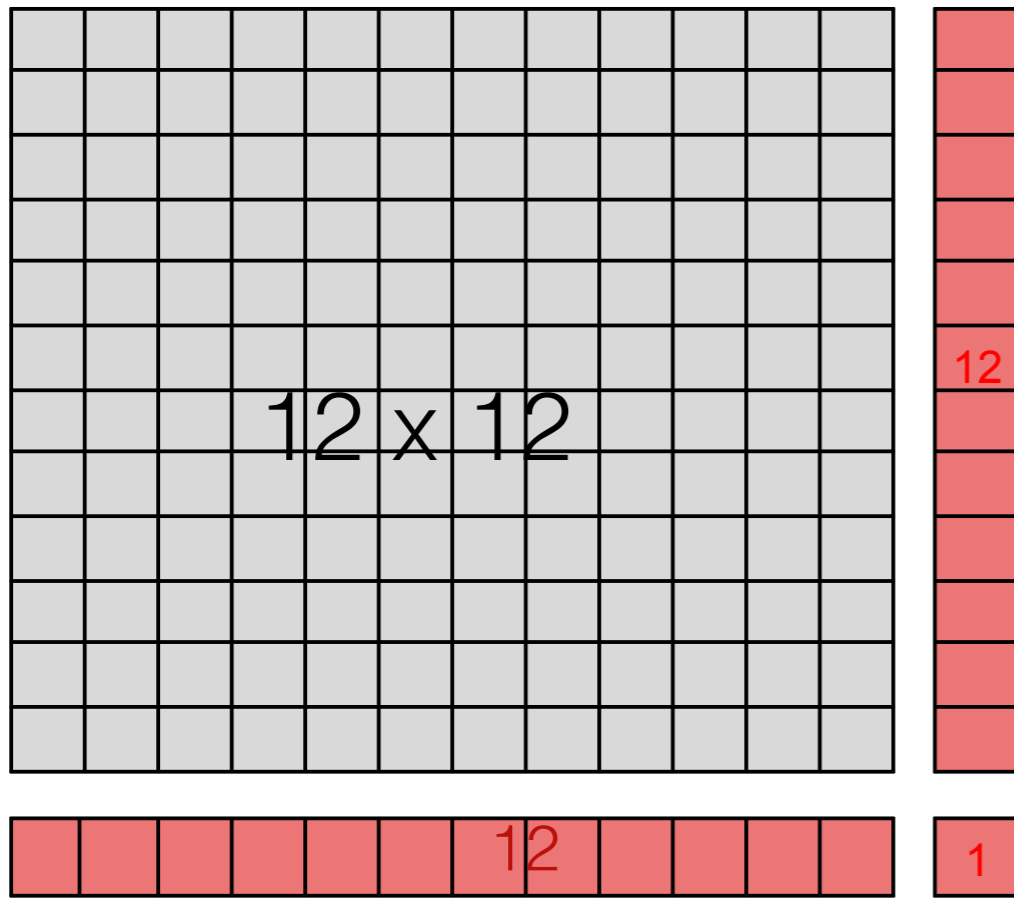


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Pythagorean Triples

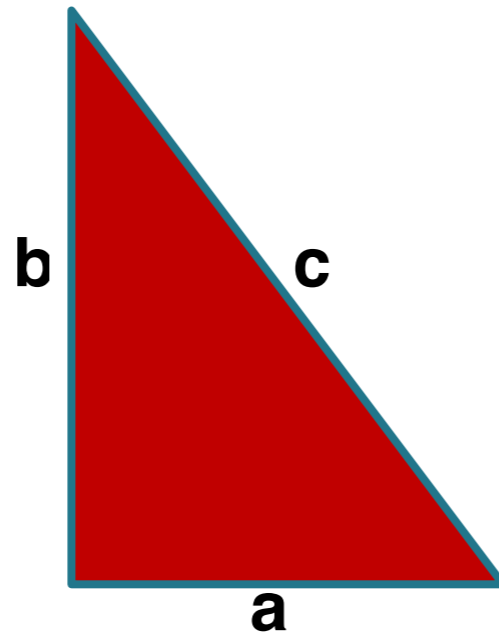




$$n^2 + 2n + 1 = (n + 1)^2$$

Pythagoras' theorem

For any right angled triangle, the square on the hypotenuse (c^2)
equals
the sum of the squares on the other two sides ($a^2 + b^2$)

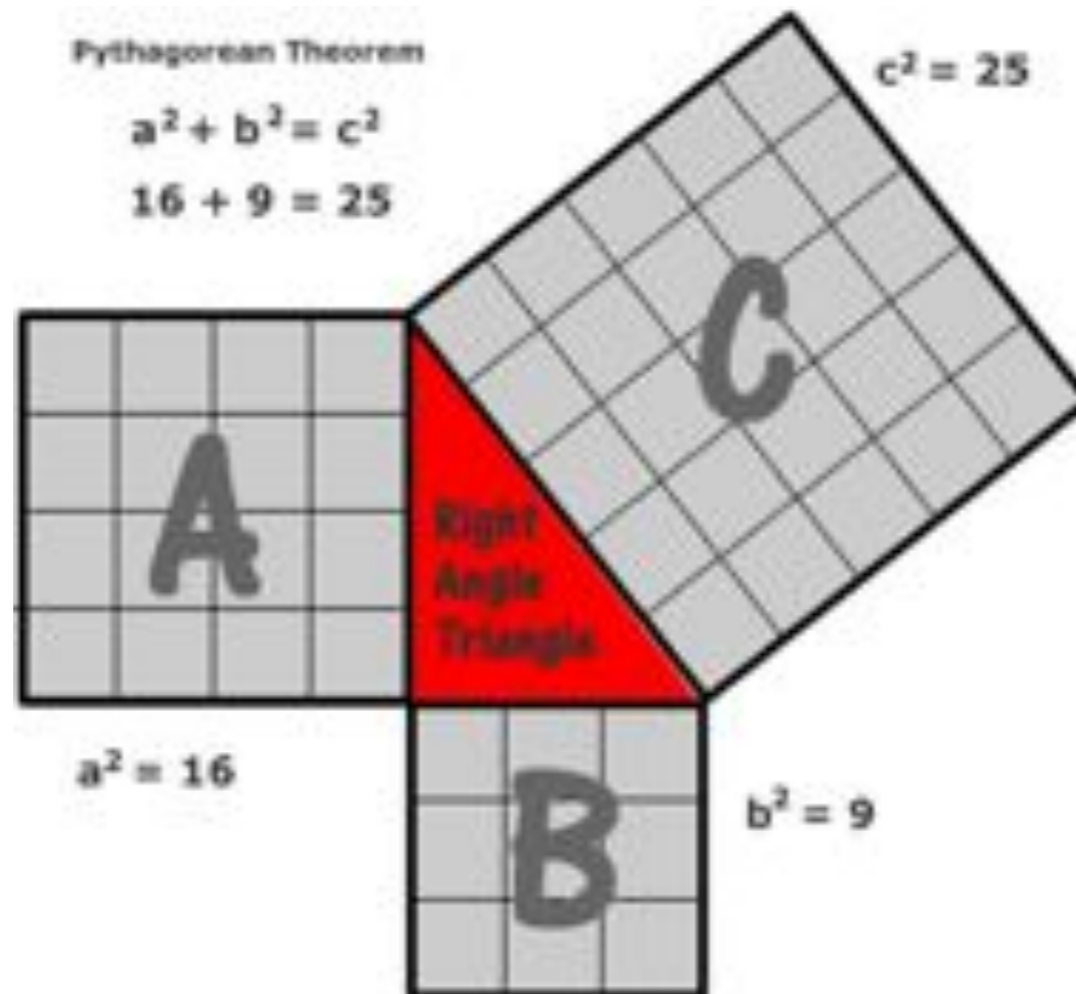


$$a^2 + b^2 = c^2$$

Pythagoras' theorem

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Example: a (3, 4, 5) triangle



$$a^2 + b^2 = c^2$$

$$\mathbf{a^2 + b^2 = c^2}$$

An integer (whole number) solution

is a Pythagorean Triple

eg [3, 4, 5]

In the domain of whole numbers (“integers”)

$$\text{if } \mathbf{a^2 + b^2 = c^2}$$

- Is there more than one solution?
- If so, are there many solutions?
- If so, are there infinitely many solutions?

Primitive Pythagorean Triples

The 3 numbers have NO common factor

[3, 4, 5]

[6, 8, 10]

[9, 12, 15]

etc

[5, 12, 13]

[10, 24, 26]

etc

<-- Primitive

