## For any natural number m > 1



## **Pythagorean triplets:**

Consider the following

 $3^2 + 4^2 = 9 + 16 = 25 = 5^2$ 

The collection of numbers 3, 4 and 5 is knows as **Pythagorean triplets**. 6,8,10 is also a Pythagorean triplets, since

 $6^2 + 8^2 = 36 + 64 = 100 = 10^2$ 

Again, observe that  $5^2 + 12^2 = 25 + 144 = 169 = 13^2$ . The number 5, 12, 13 from another such triplet.

## Can you find more such triplets?

For any natural number m > 1, we have  $(2m)^2 + (m^2 - 1)^2 = (m^2 + 1)^2$ . So, 2m,  $M^2 - 1$  and  $m^2 + 1$  forms a Pythagorean triplet.