

## The Girard and de Marco Families

Let's model the problem with equations. To do that, we first should define the variables as follows.

Entity	Variable
Father's age digits	$p, q$
Mother's age	$r$
Tony's age	$t$
Jackie's age	$s$

Then, we can write the following equations:

$$p^2 + q^2 = r + 2$$

$$r = 10p + q - t + 9$$

$$5(t - s) = r - s$$

$$3(s + 6) = r + 6$$

Considering the possible combinations for  $p, q$ , and the fourth equation, that establishes the divisibility of  $r$  by 3, we can find  $p = 4, q = 5, r = 39$ . From these values, using equations 4 and 3 in this order, we can get the other values,  $s = 9, t = 15$ .

Then, after checking all the conditions, we can conclude that the ages for father, mother, Tony, and Jackie are, respectively, **45, 39, 15, 9**.