SIMPLY INHERITED HUMAN TRAITS; PEDIGREES

The ability to taste the chemical PTC shows a simple Mendelian pattern of inheritance in humans.
Given the legend:

\[
\begin{array}{c|c}
\text{T} & \text{Taster} \\
\text{t} & \text{nontaster}
\end{array}
\]

we can see that tasting is dominant to nontasting.

This does not mean that most people automatically will be tasters; either a dominant or recessive trait may be rare. In this case, about 70% can taste PTC and 30% cannot.

Do you know the genotype of a nontaster? sure

What about a taster? They could be TT or Tt. How could you determine a taster's actual genotype? There are 2 ways;

1) Make a testcross; that is a cross to a homozygous recessive and see if any tt progeny are born. Of course if there were only one or two taster children and no nontasters, you would still not be sure.

2) Examine the persons "pedigree". If either parent was a nontaster, we can be certain.

In human pedigrees, circles represent females and squares are males. For "affected" individuals the symbols are filled-in.

A horizontal line between a male and female represents a union; the progeny are shown in generation II, III etc. in the natural birth order.
A.  
I  
II  
Typical clue for a recessive trait.  
(affected child with normal parents)  

B.  
I  
II  
Most likely dominant, especially if the trait is rare in the whole population  

Look at lots of examples, and make your own pedigree.