

Dominant/Recessive

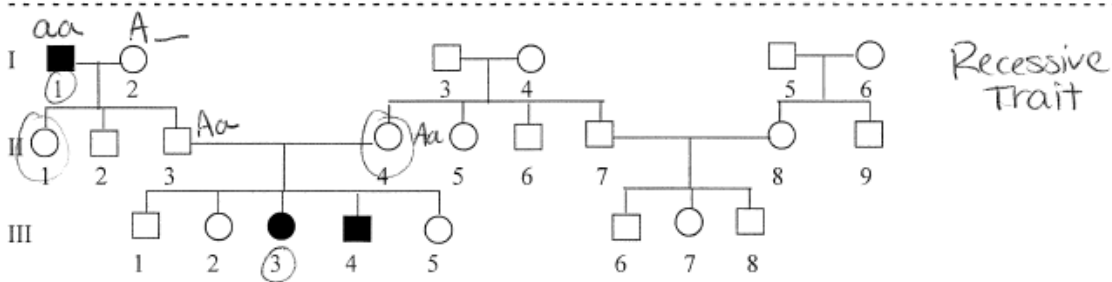
Name Answer Key

Genetics Pedigree Worksheet

A pedigree is a chart of a person's ancestors that is used to analyze genetic inheritance of certain traits – especially diseases. The symbols used for a pedigree are:

- female, unaffected
- female, affected
- male, unaffected
- male, affected

- Siblings are placed in birth order from left to right and are labeled with numbers.
- Each generation is labeled with a Roman numeral.
 - Example: we would name an individual II-3 if he/she was in the second generation and the 3rd child born



Try to identify the genotypes of the following individuals using the pedigree above. (homozygous dominant, homozygous recessive, heterozygous)

- III-3: aa; homozygous recessive
- I-1: aa, homozygous recessive
- II-1: Aa, heterozygous dominant
- II-4: Aa, heterozygous dominant

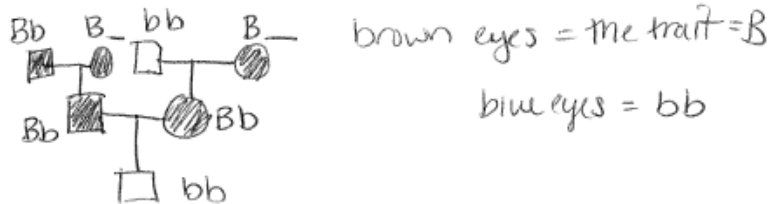
1. Is this trait dominant or recessive? Explain your answer.

Recessive: It skips a generation, so it must be recessive

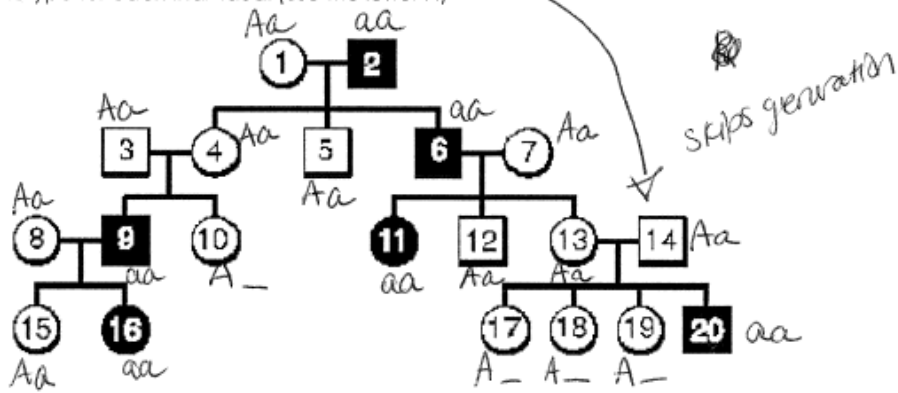
2. How can you know for sure that individuals II-3 and II-4 are heterozygous?

II-3 has one parent w/ the trait (aa), so must have a a allele. II-4 must also be heterozygous because her kids, III-3 and III-4 have the trait (aa)

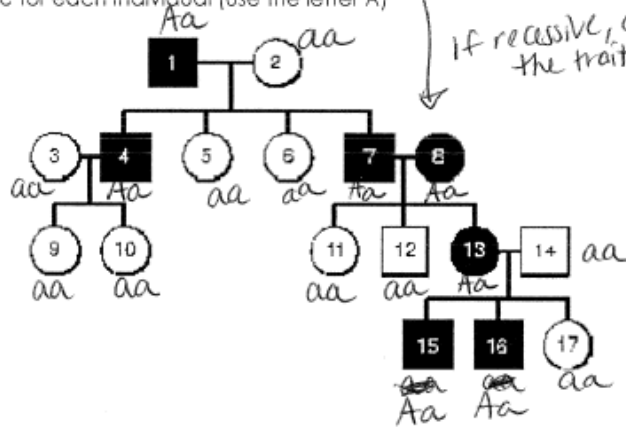
3. Brown eyes are a dominant eye-color allele and blue eyes are recessive. A brown-eyed woman whose father had blue eyes and whose mother had brown eyes marries a brown-eyed man whose parents are also brown-eyed. They have a son who is blue-eyed. Please draw a pedigree showing all four grandparents, the two parents, and the son. Indicate which individuals you are certain of their genotype and where there are more than one possibilities.



20. Is the trait dominant or recessive? RECESSIVE
 Write the genotype for each individual (use the letter A)



21. Is the trait dominant or recessive? Dominant
 Write the genotype for each individual (use the letter A)



Making Conclusions

22. If a child has an autosomal dominant trait, what can you say about the parents?

One of them must have the trait

23. If two parents have an autosomal dominant trait, what can you say about their children?

Nothing: they could have it or not have it depending on the genotype of the parents, ~~at least~~ At least 1 child will probably have the trait.

24. If two parents have an autosomal recessive trait, what can you say about their children?

All their kids would have the trait.

25. If two parents do not have an autosomal recessive trait, what can you say about their children?

They may or may not have the trait (depending on the genotypes of the parents).

26. Can autosomal recessive traits skip generations?

Yes