Modes of Inheritance - Assigning Appropriate Allele symbols

1. Complete Dominance
   One phenotype is dominant and another is recessive. One the dominant phenotype is observed in a heterozygote.

2. X-linked Dominance
   One phenotypes is dominant to the other, But in males there are no heterozygotes or homozygotes, as males only have one X chromosome.

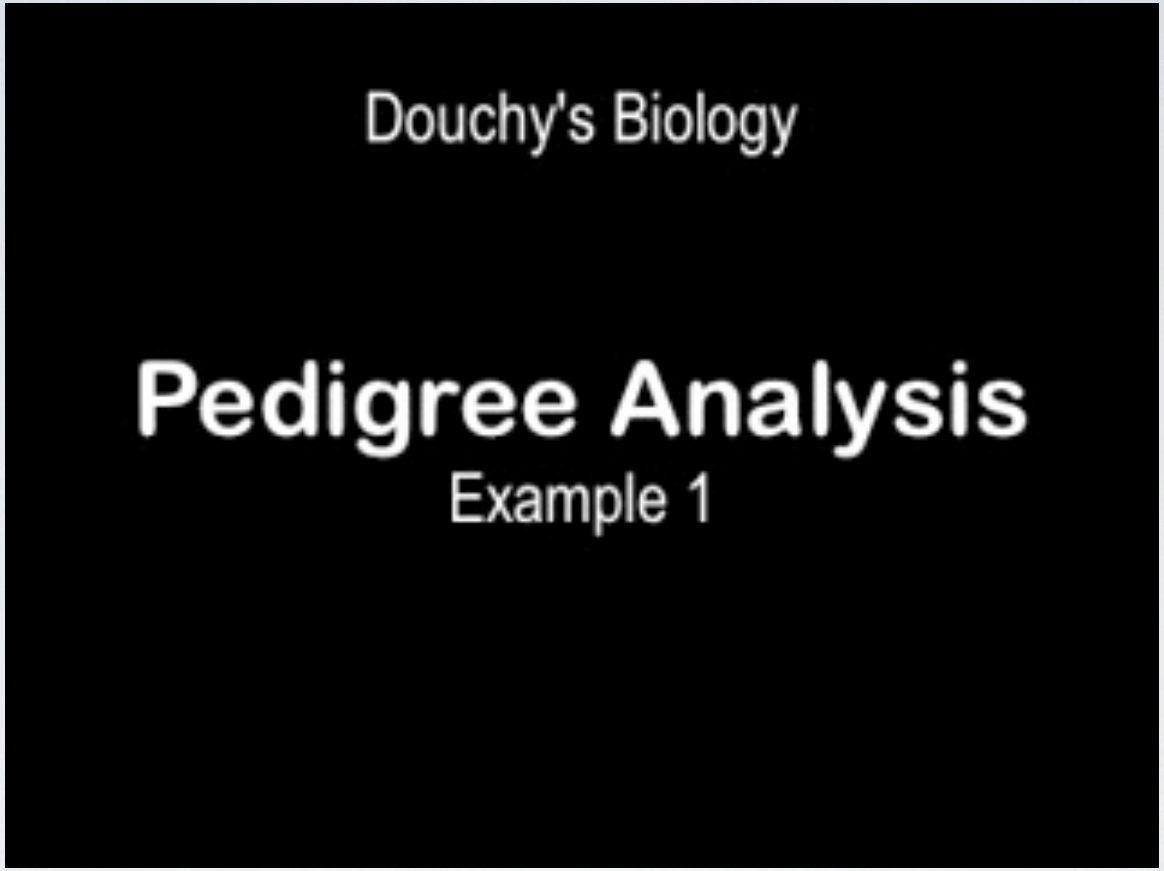
3. Co-dominance / Incomplete Dominance
   Both phenotypes are observed in a heterozygote.

4. Multiple Alleles
   NOT a mode of inheritance per se - but just a situation where there are more than two known alleles for a single gene locus.

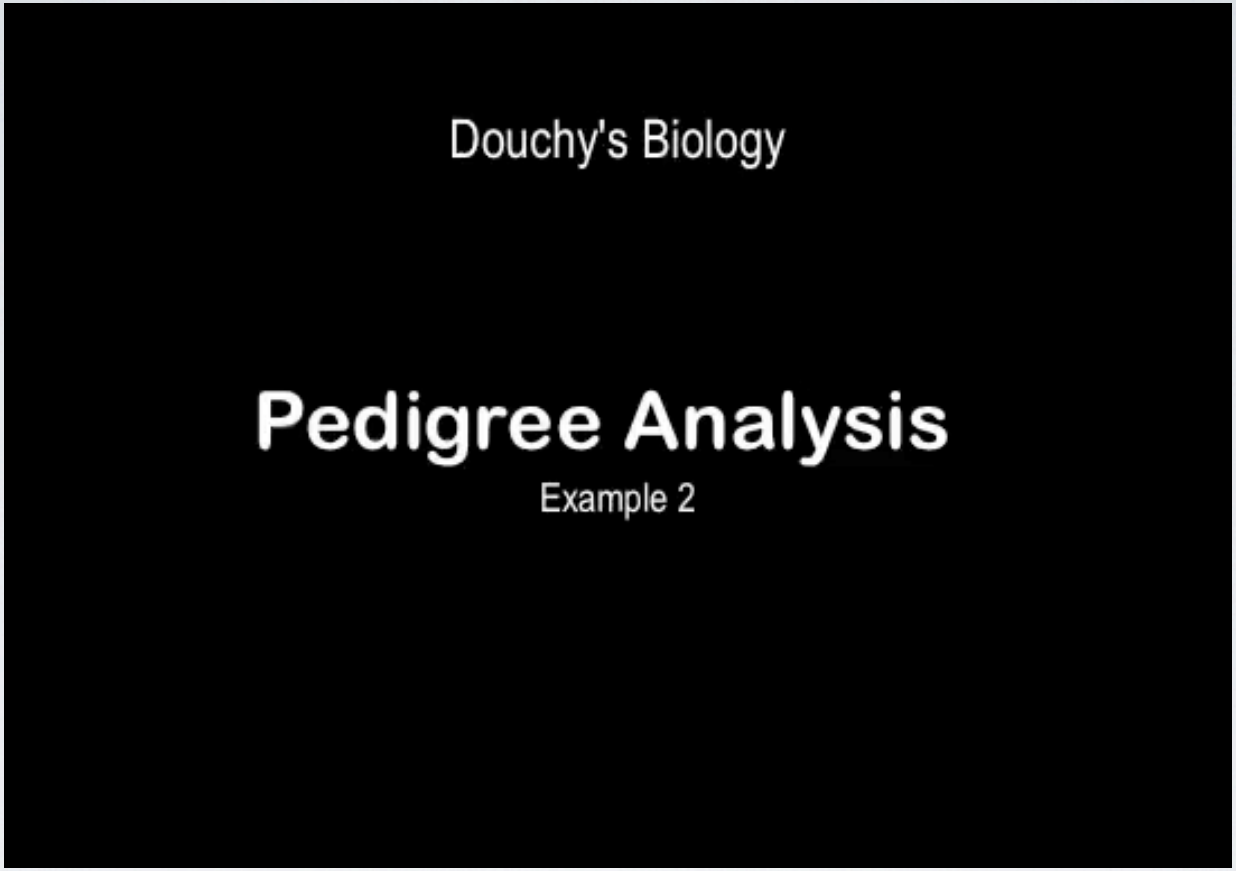
5. Dihybrid Independently assorted genes

6. Dihybrid linked genes.

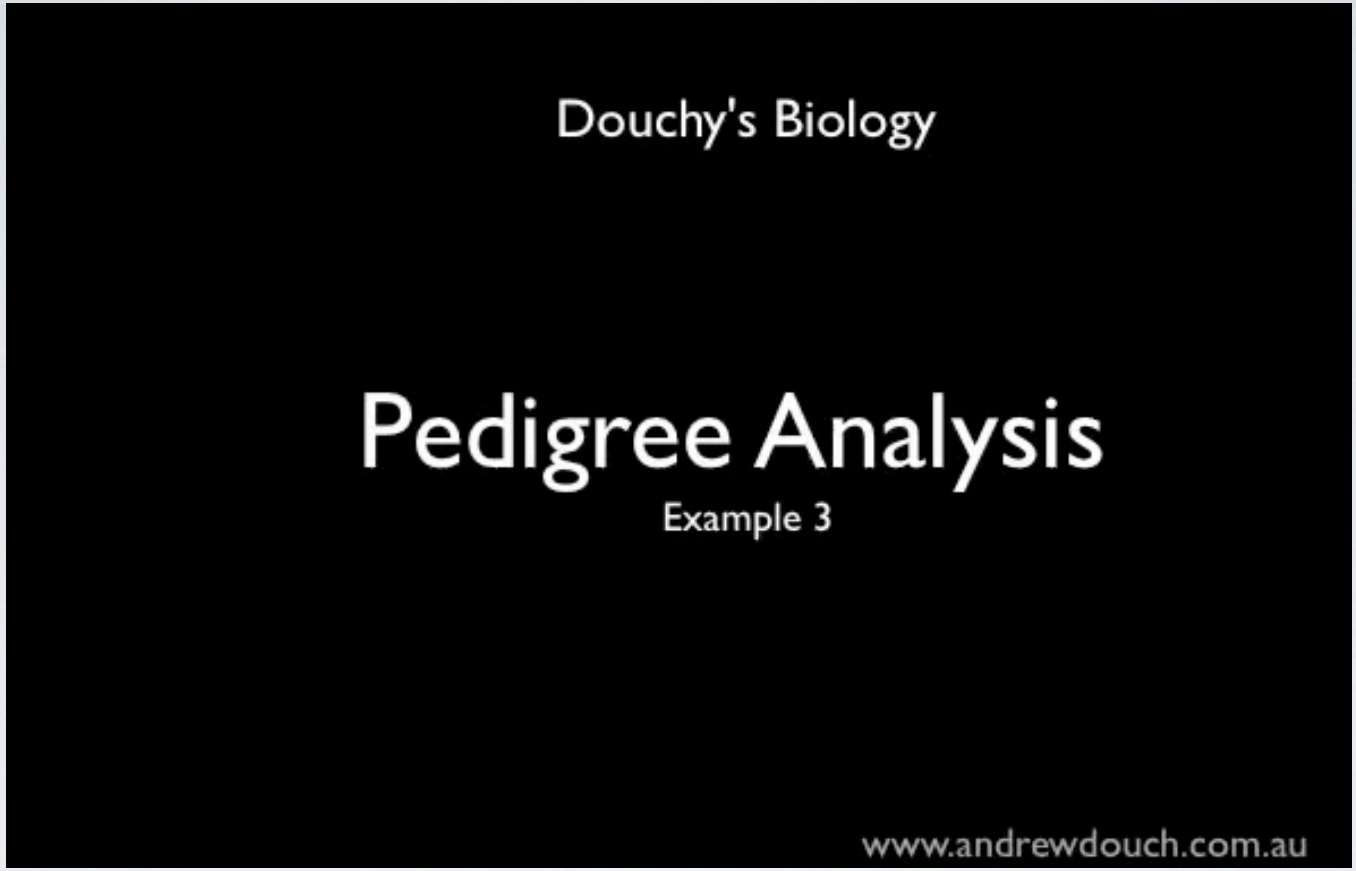
Example



Example 1



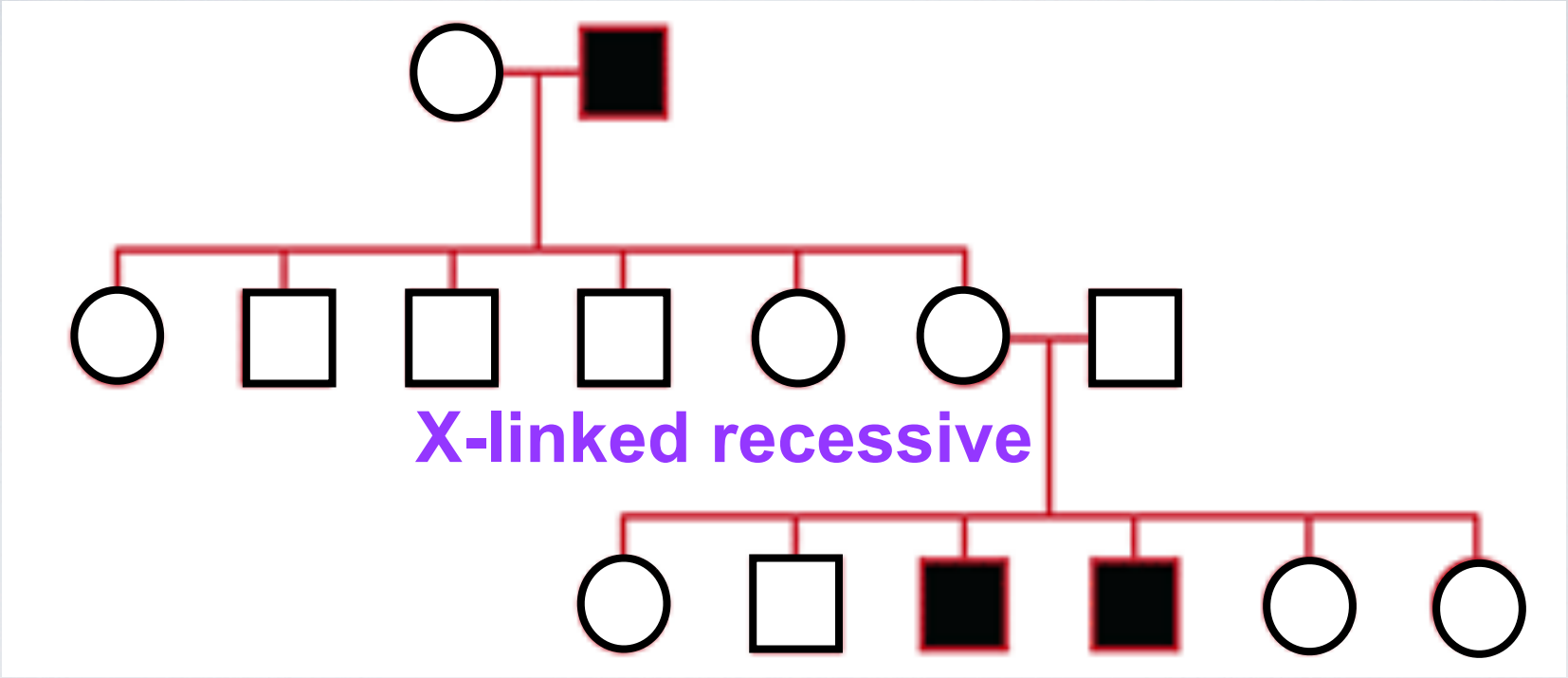
Example 2


Douchy's Biology
Pedigree Analysis
Example 3
www.andrewdouch.com.au

§

Example 3

Example 1



Hemophilia

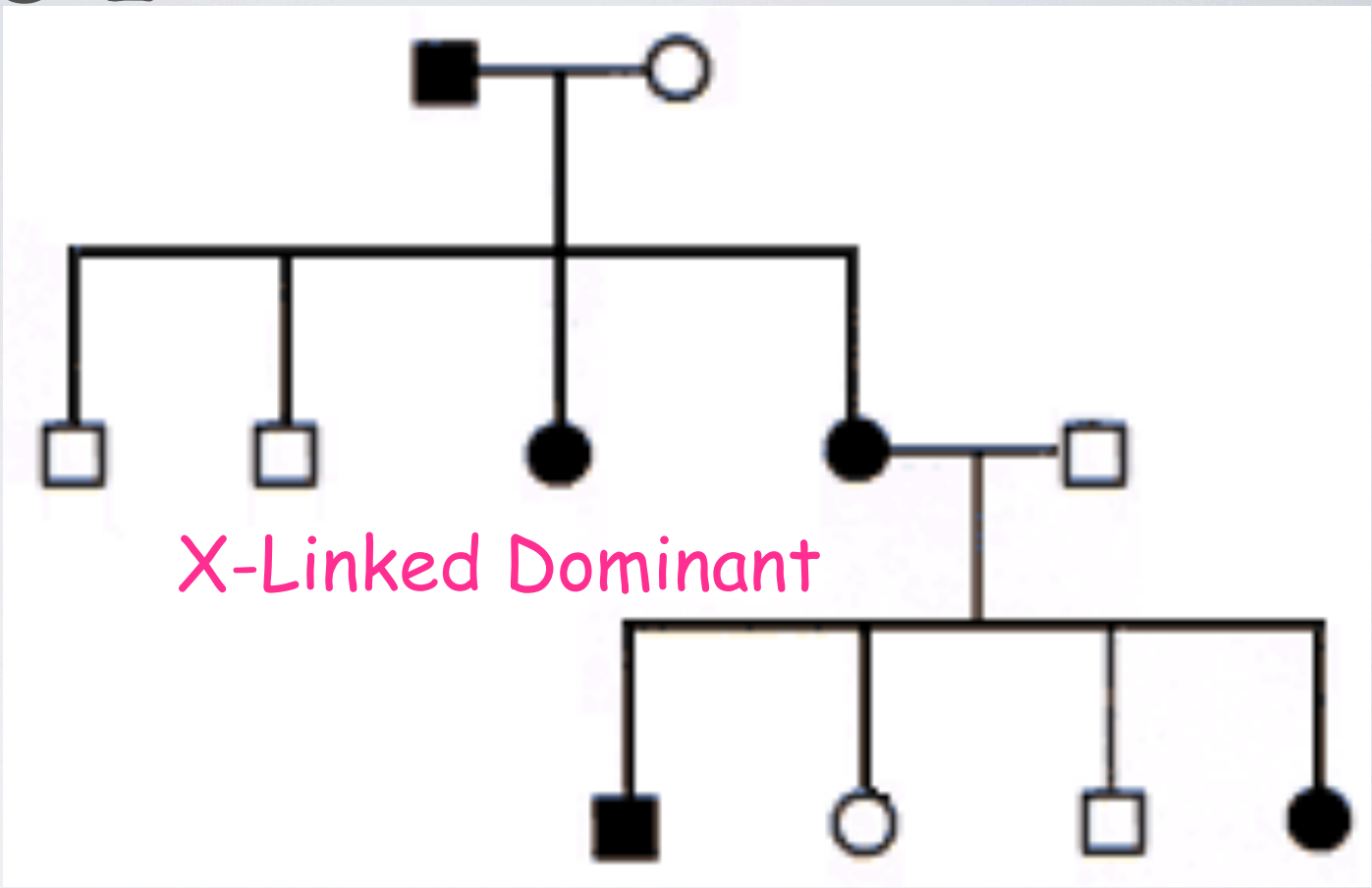
Only males are affected and sons do not share the phenotype of their father -

Thus X-linked

Expression of hemophilia

skips generations: RECESSIVE

Example 2



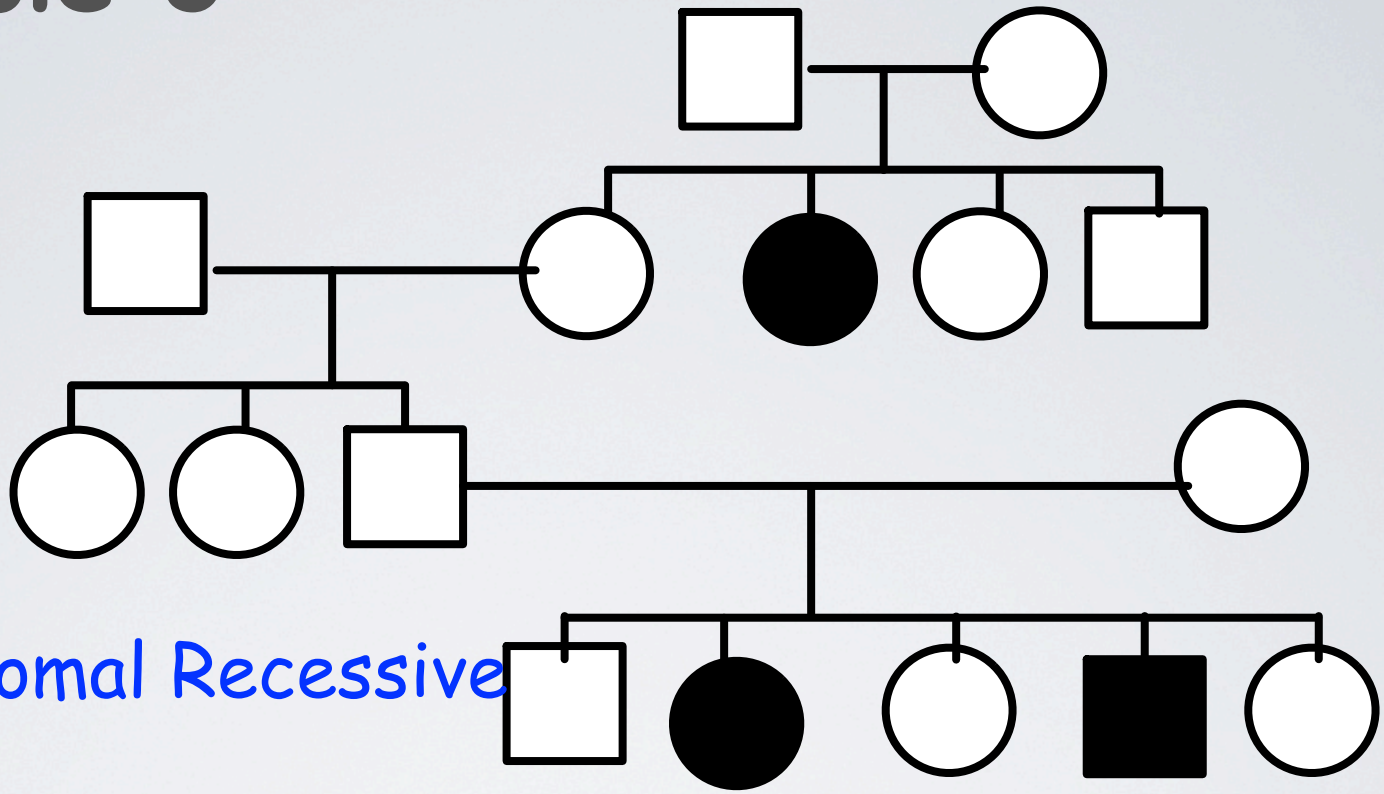
X-Linked Dominant

Every Generation: Dominant

Father passes on to only daughters

Mothers passes on to 1/2 of offspring

Example 3

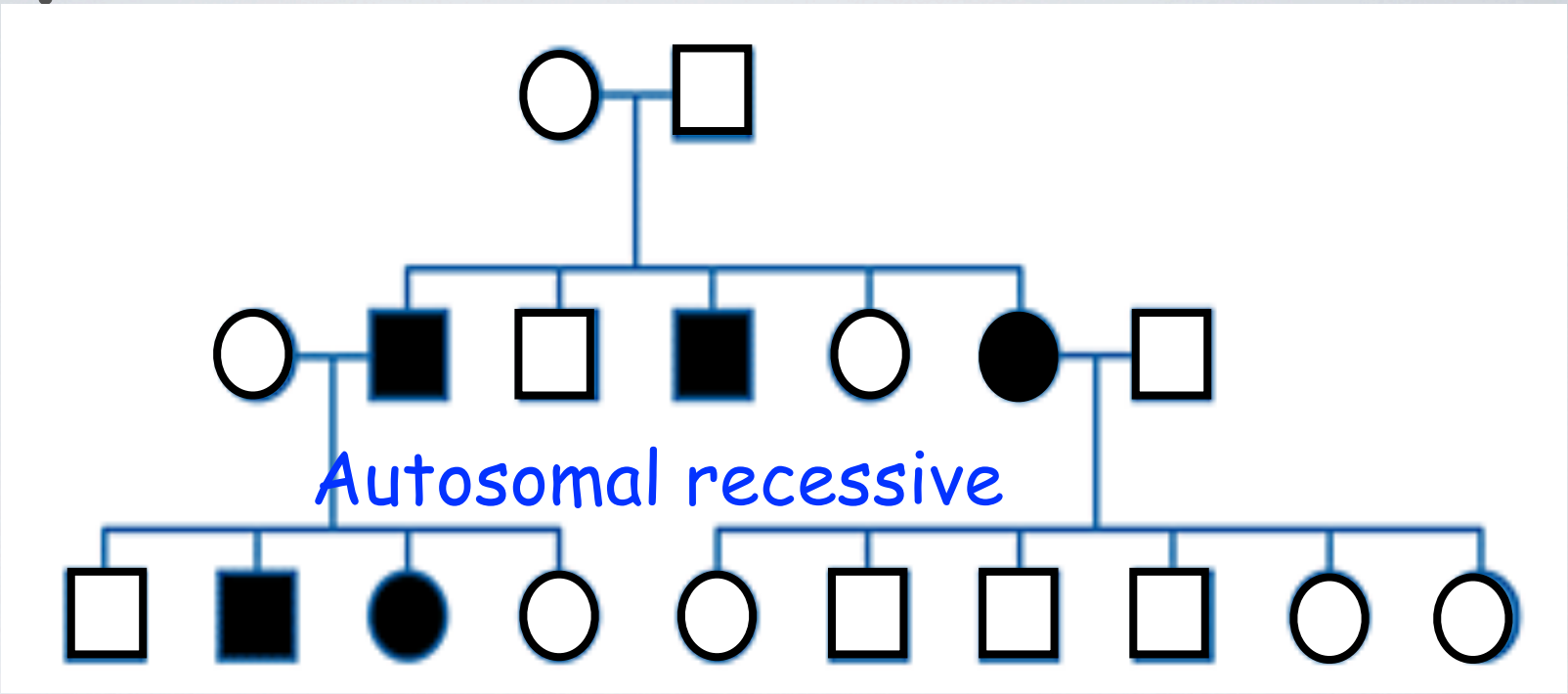


Autosomal Recessive

Affected individual from unaffected parents

Skip generations

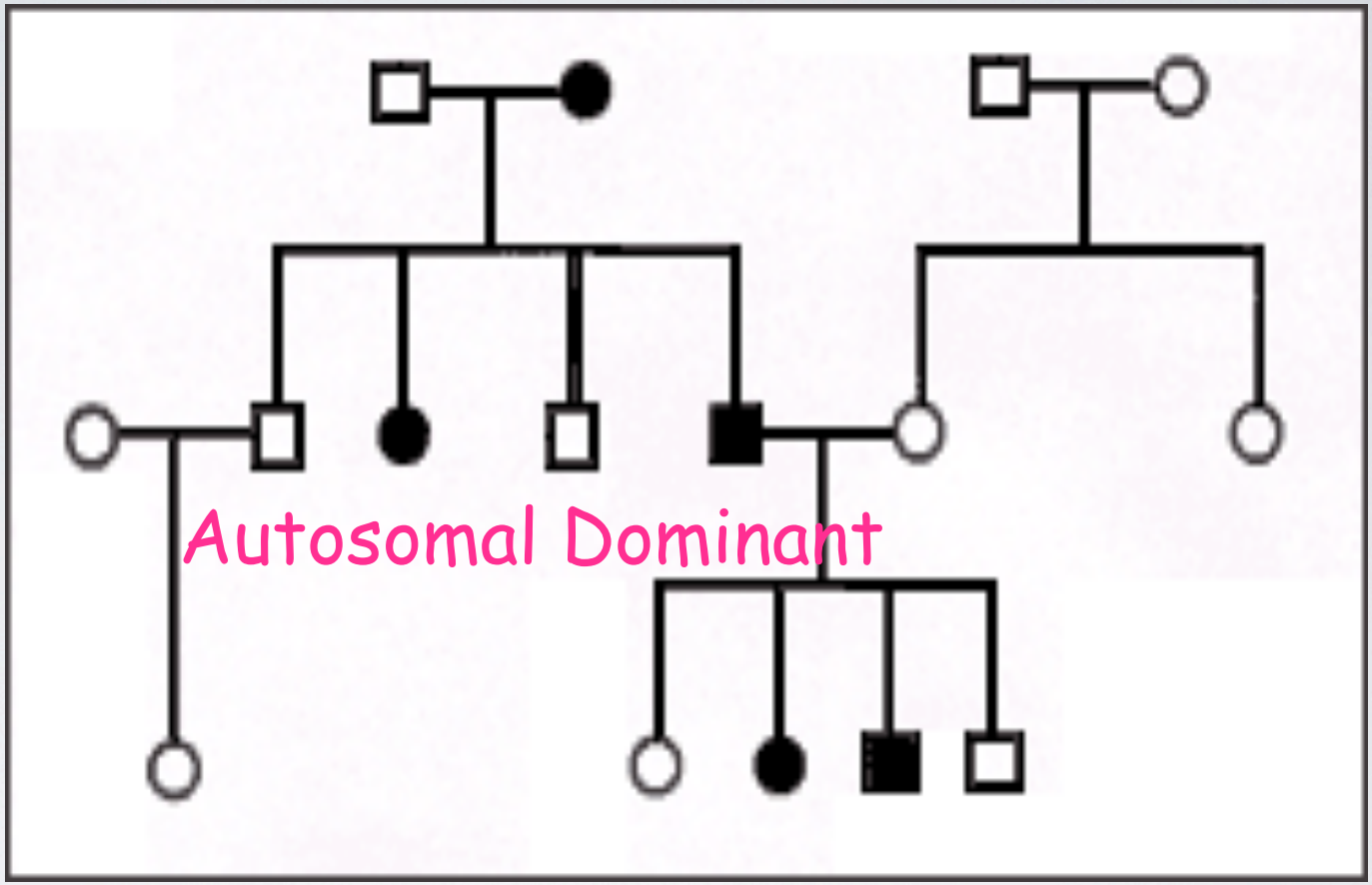
Example 4



Expressed in both sexes at approximately equal frequency: AUTOSOMAL

Not expressed Autosomal Recessive in every generation: RECESSIVE

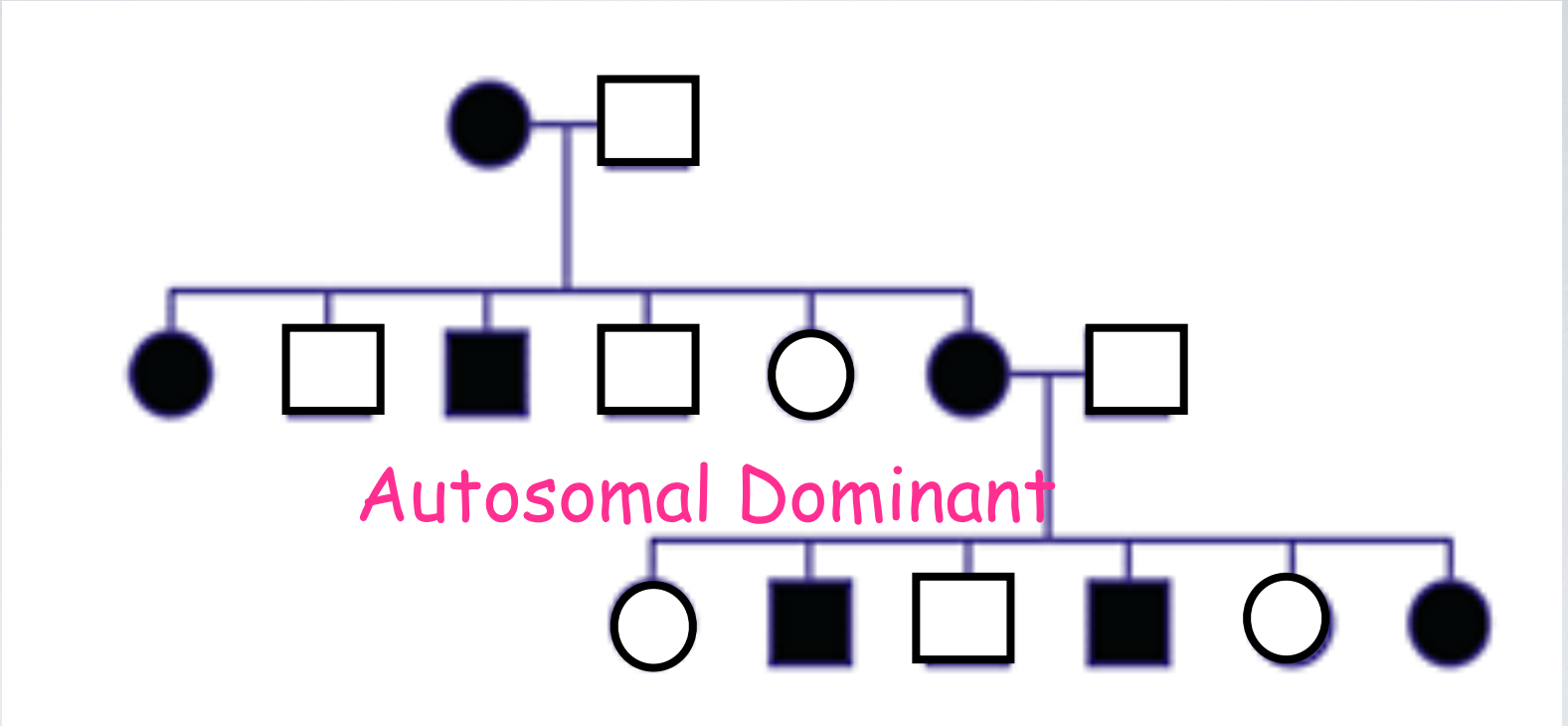
Example 5



In every generation: DOMINANT

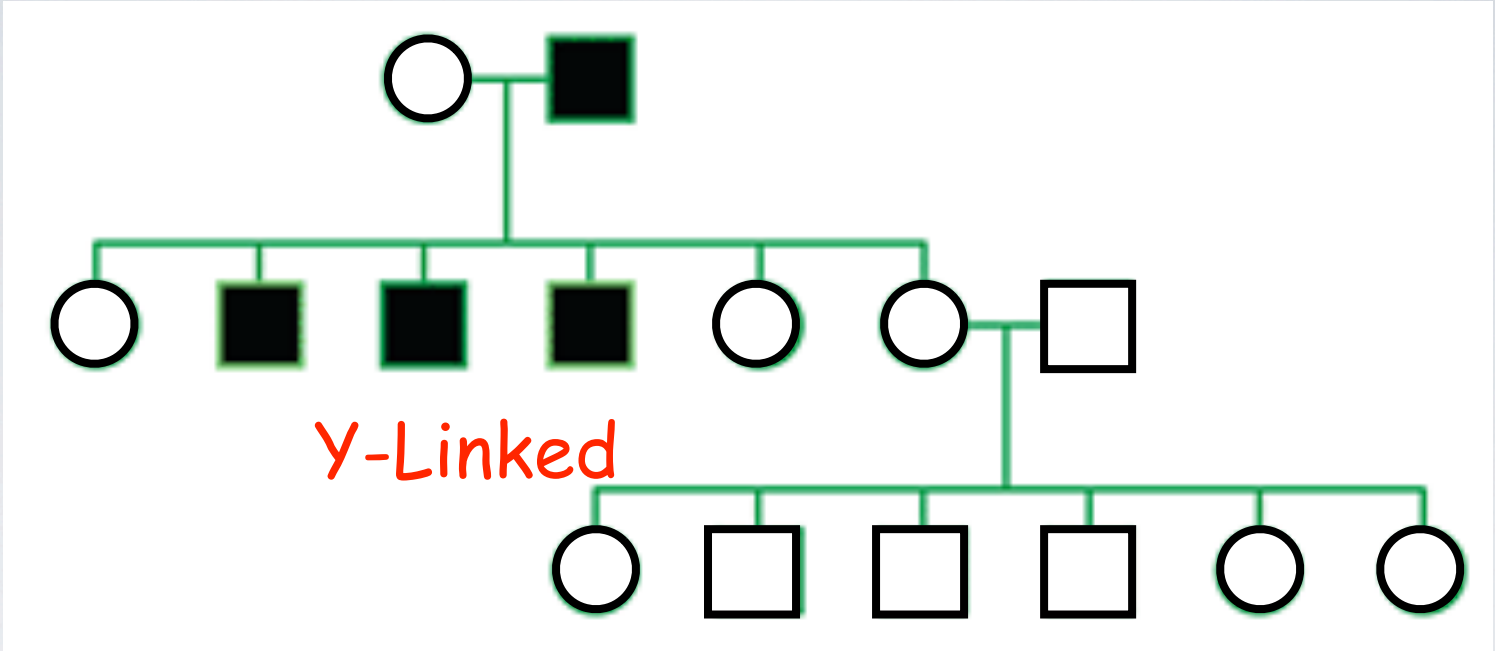
Equal in Males and Females: Autosomal

Example 6



Appears equally In both sexes so autosomal
In every generation so dominant

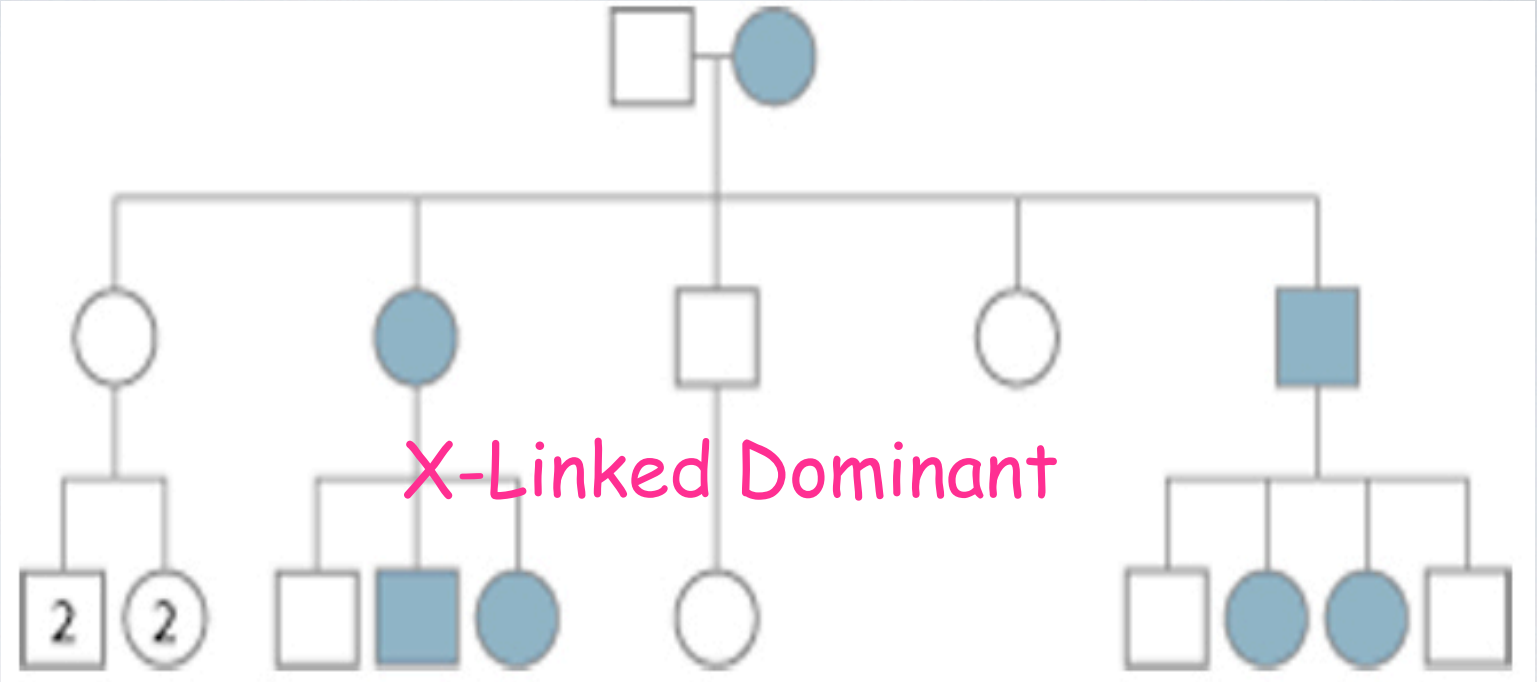
Example 7



Only males are affected

All sons of affected father

Example 8



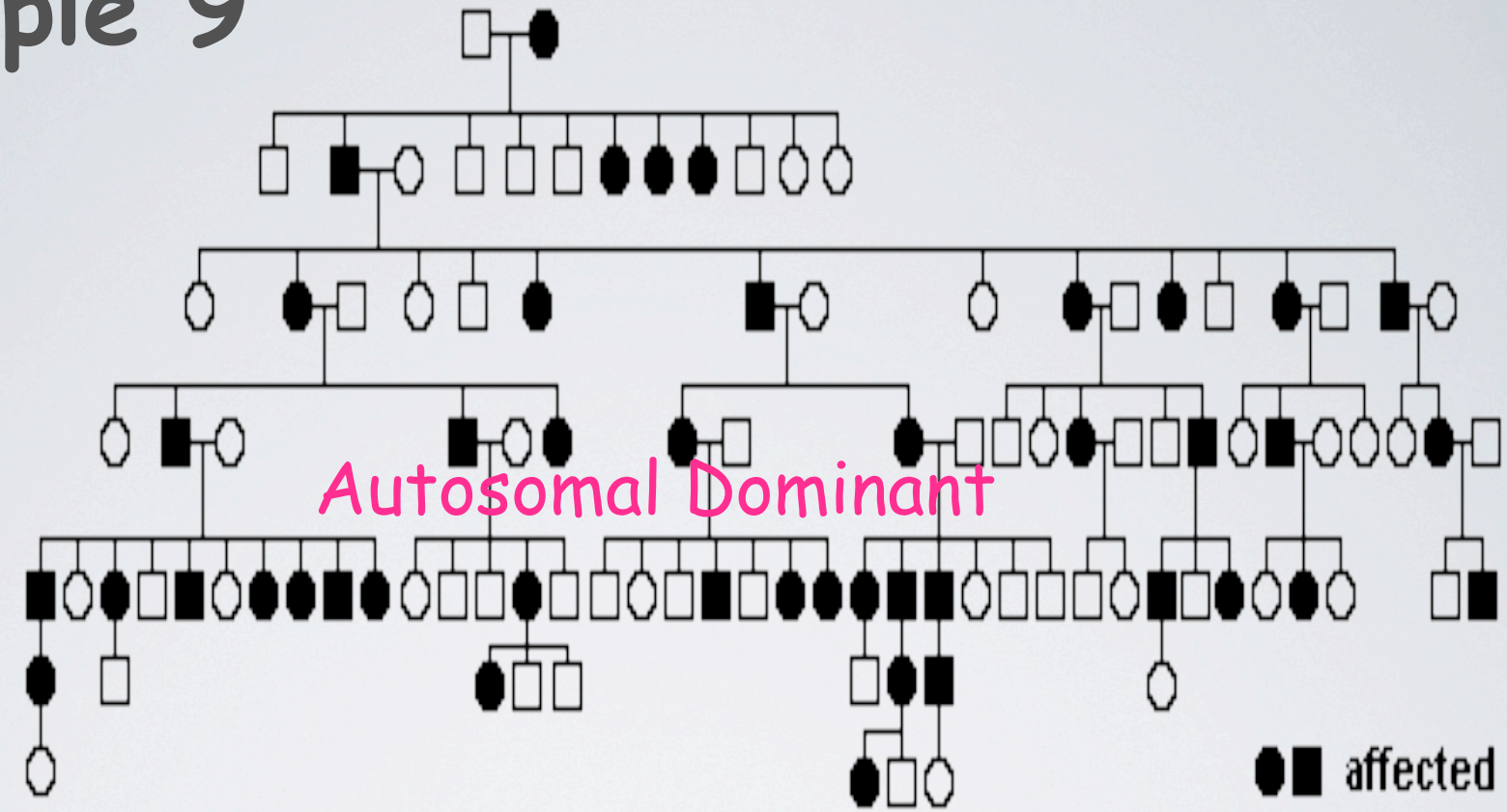
X-Linked Dominant

Every generation: DOMINANT

Daughters of affected males are affected

Half offspring from mothers should get it regardless of sex.

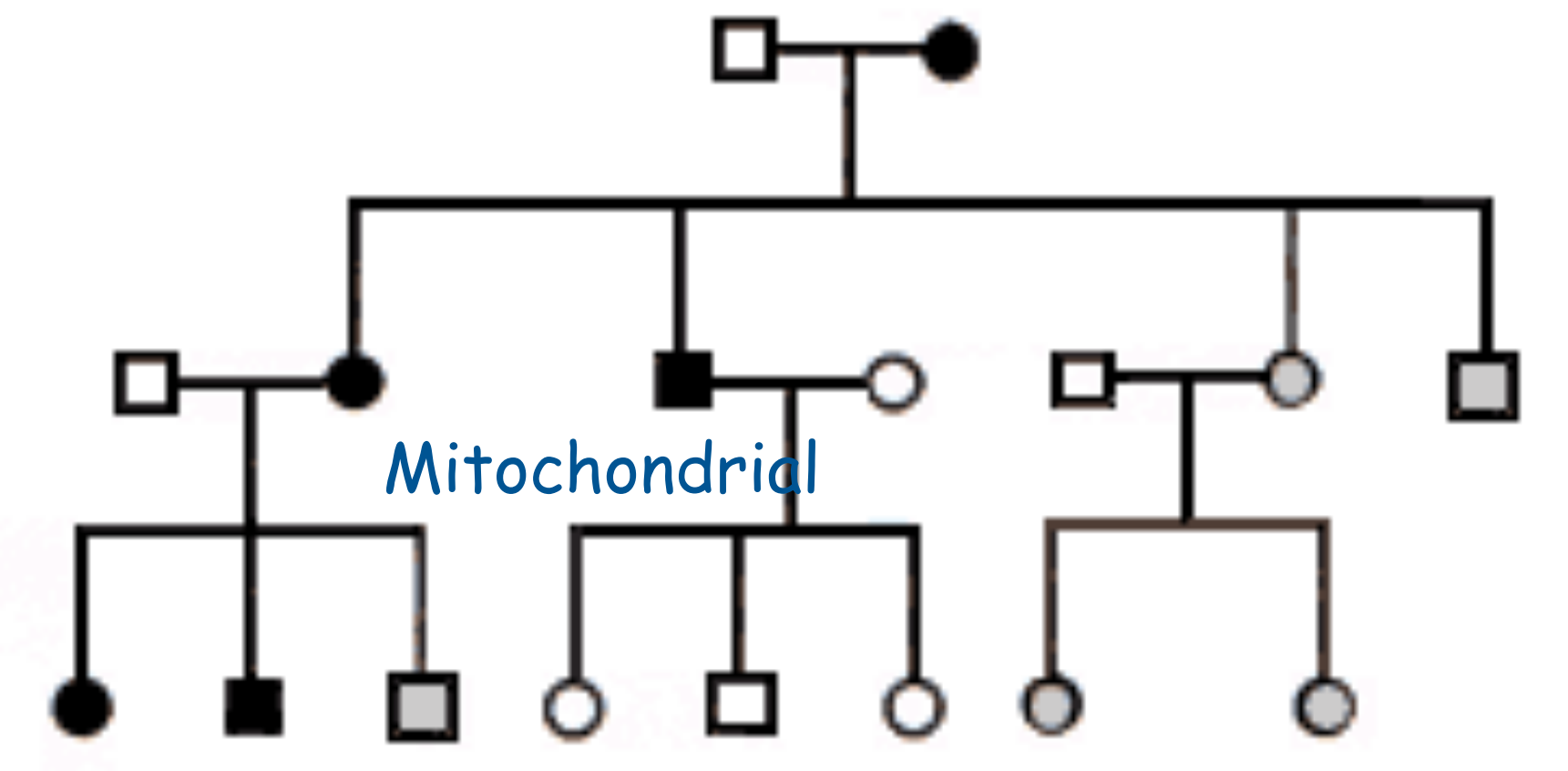
Example 9



In every generation: DOMINANT

Both Male and female affected: AUTOSOMAL

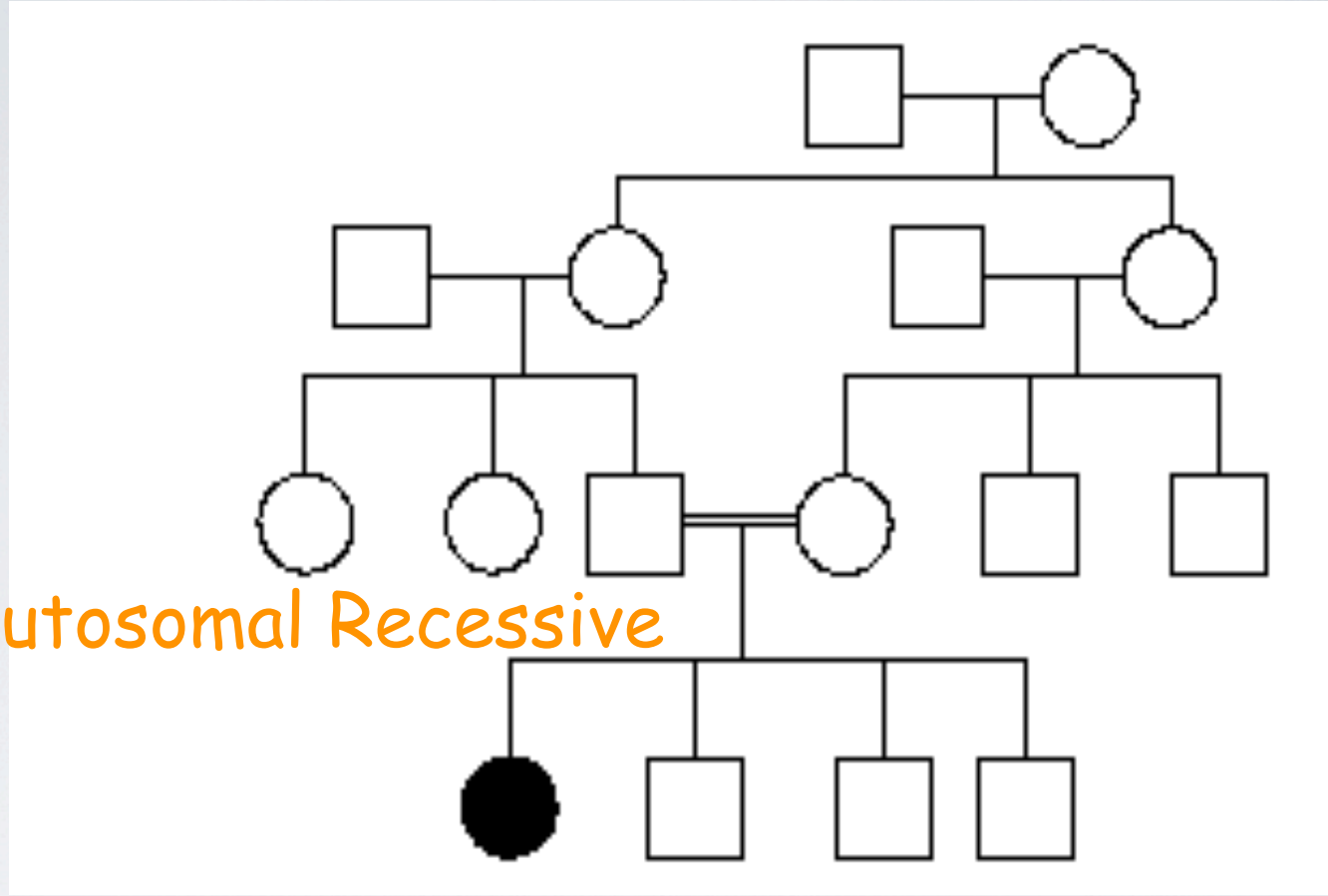
Example 10



All children at risk

Father doesn't pass it along to any children

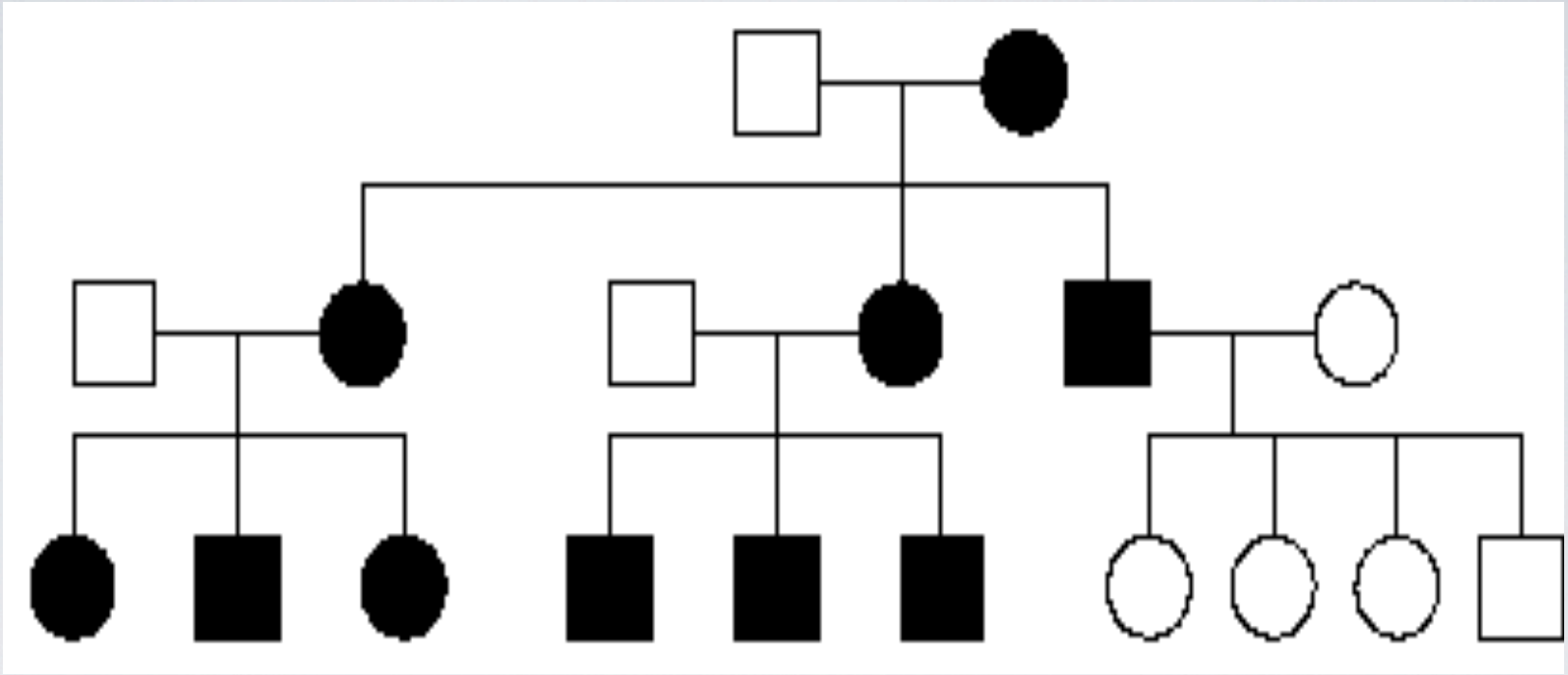
Example 11



Autosomal Recessive

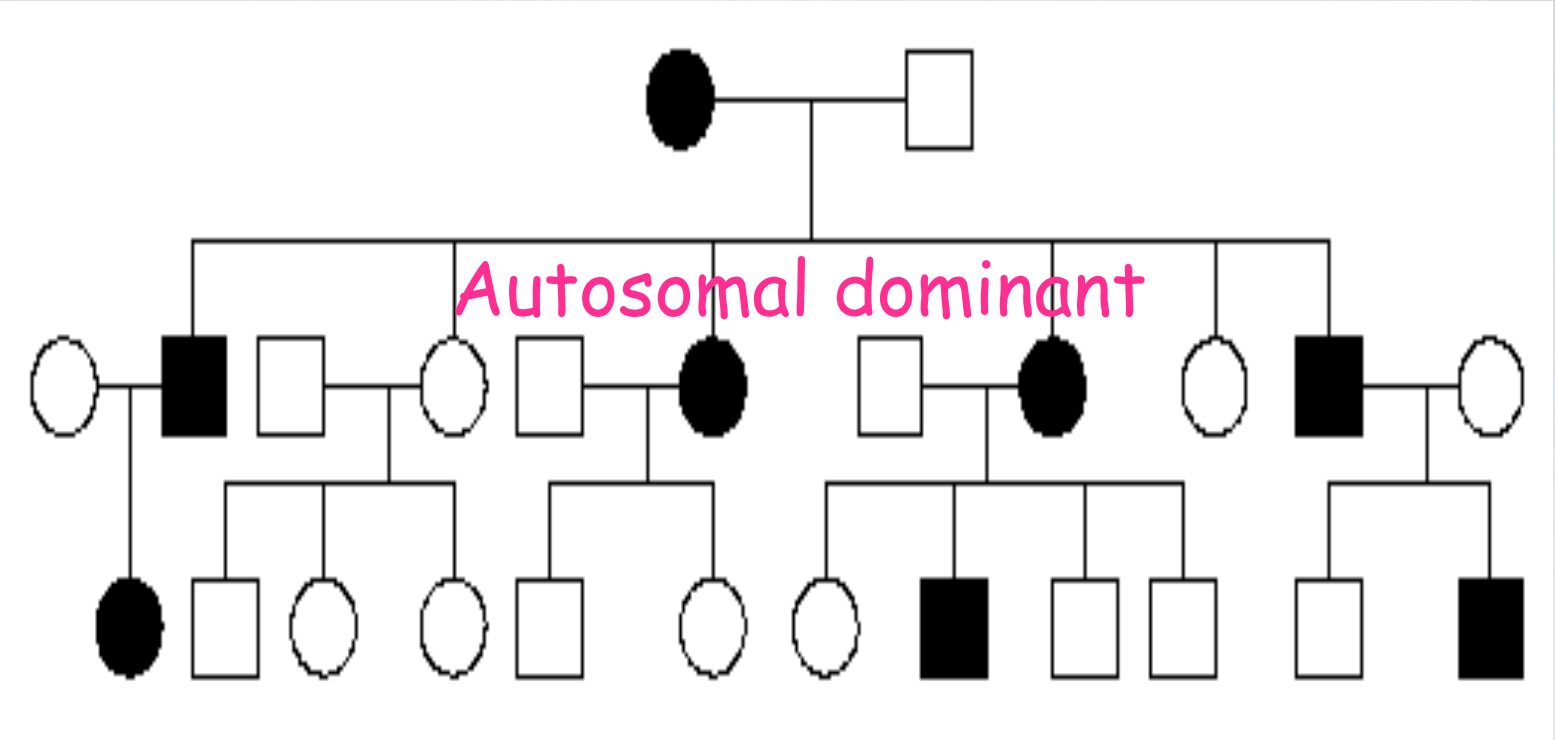
Consanguinity

Example 12



Mitochondrial Inheritance

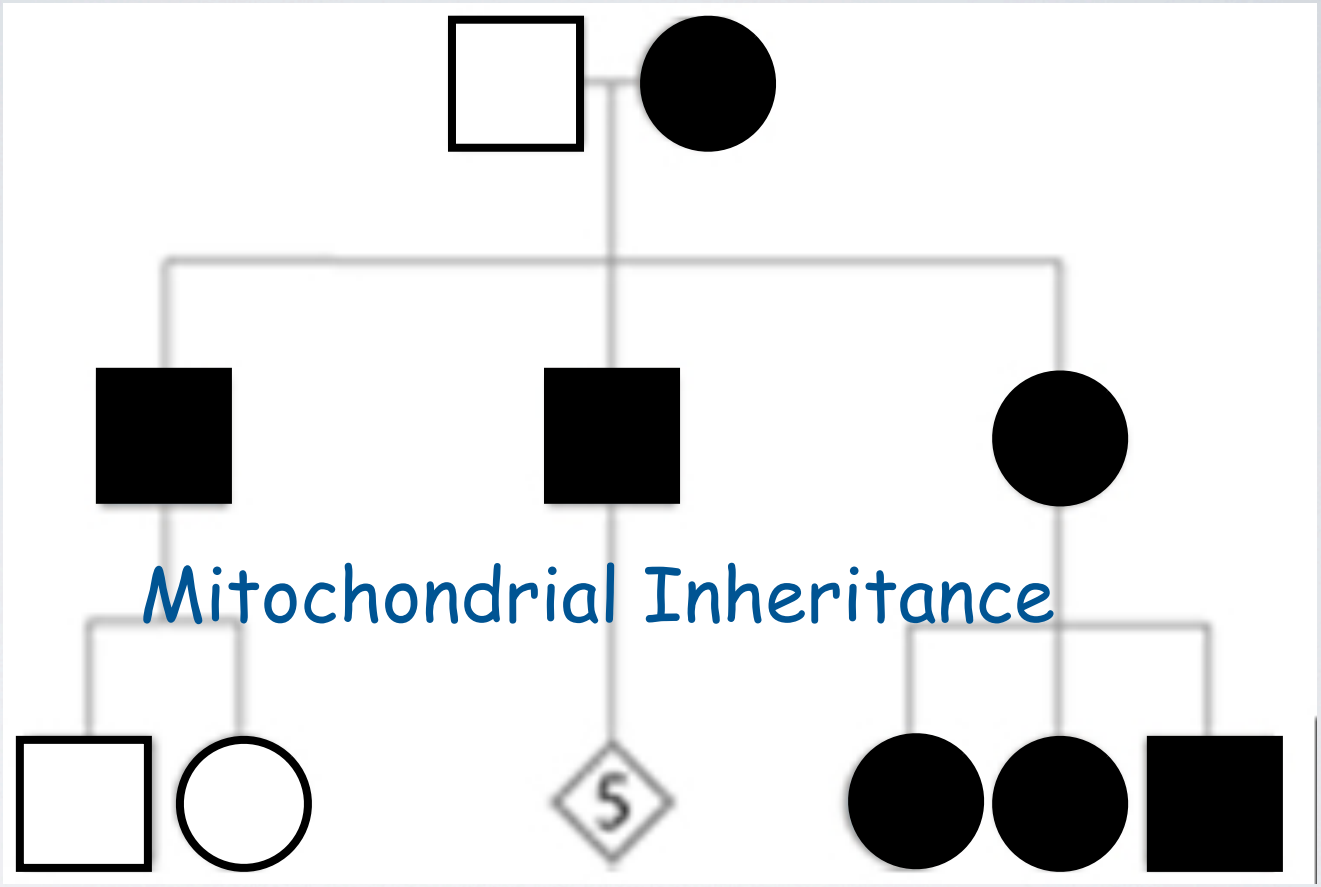
Example 13



In every generation: DOMINANT

In males and females: Autosomal

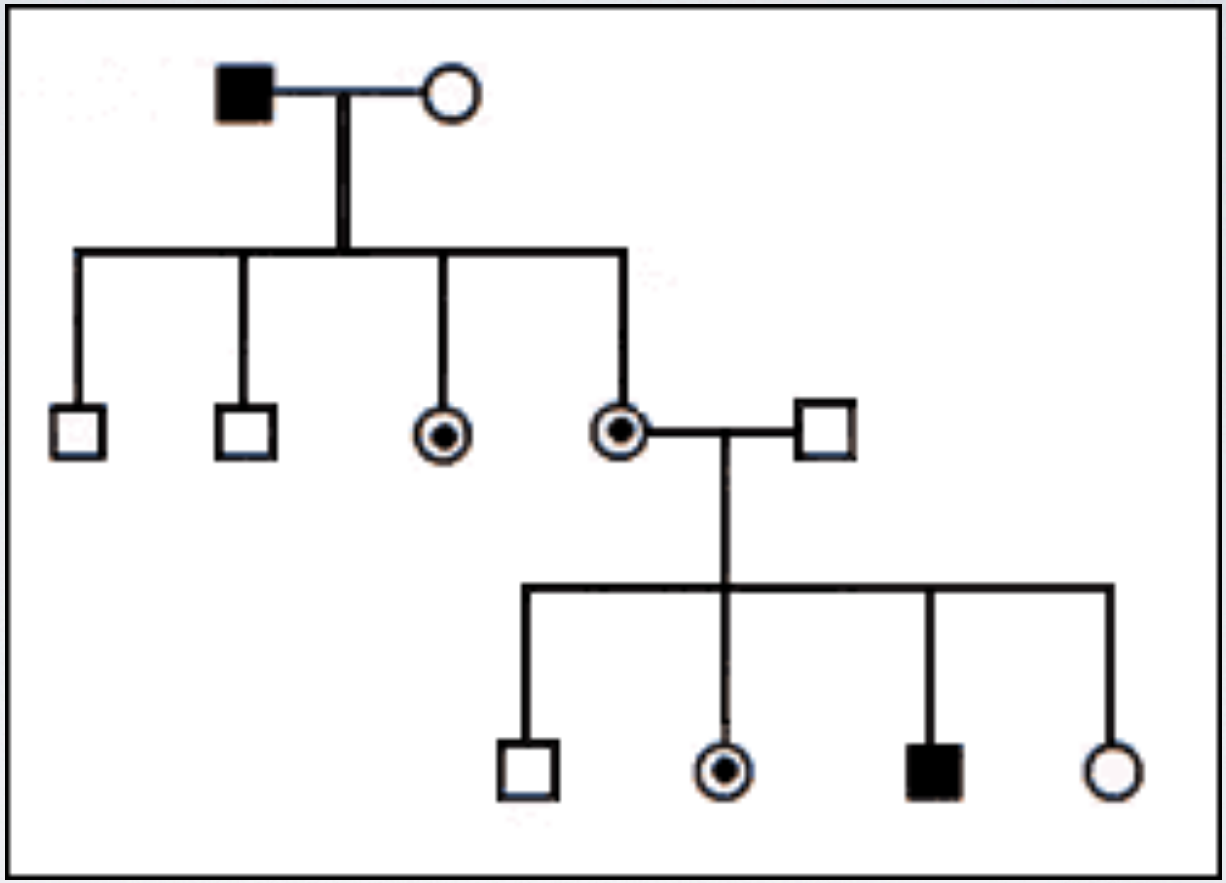
Example 14



Fathers don't transmit, just mothers

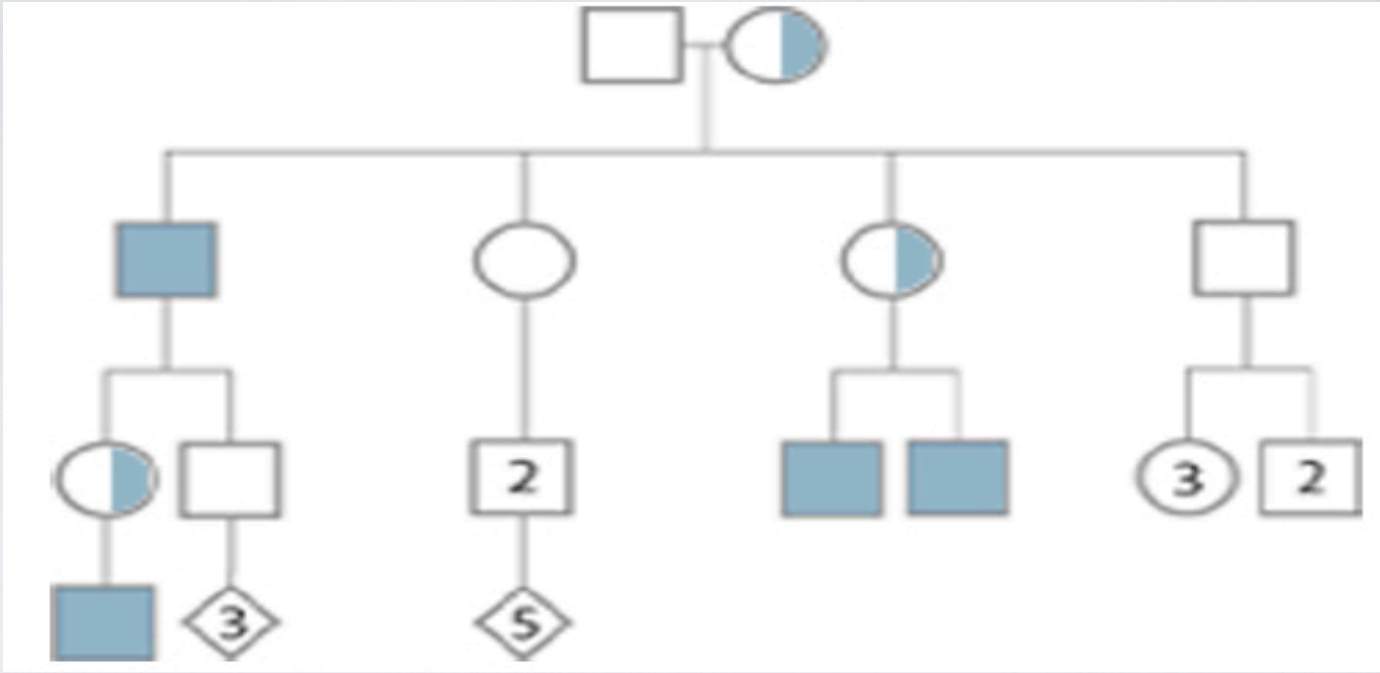
All offspring at risk

Example 15



X-linked Recessive

Example 16



Not in every generation: RECESSIVE
Affected dads make carrier femailes
Transmitted through mother
Only males are affected and sons do not share the phenotype of their father - Thus X-linked
Expression of hemophilia skips generations: RECESSIVE

Example

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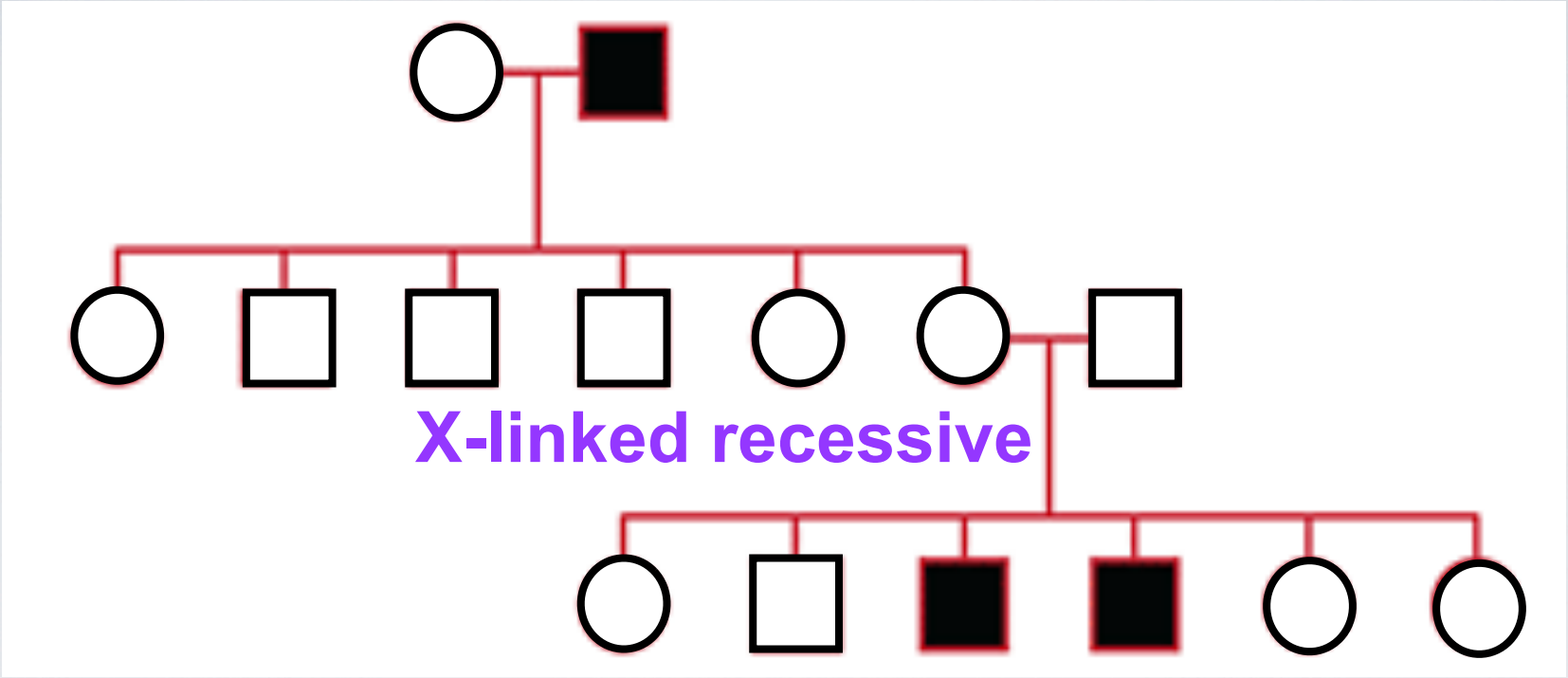

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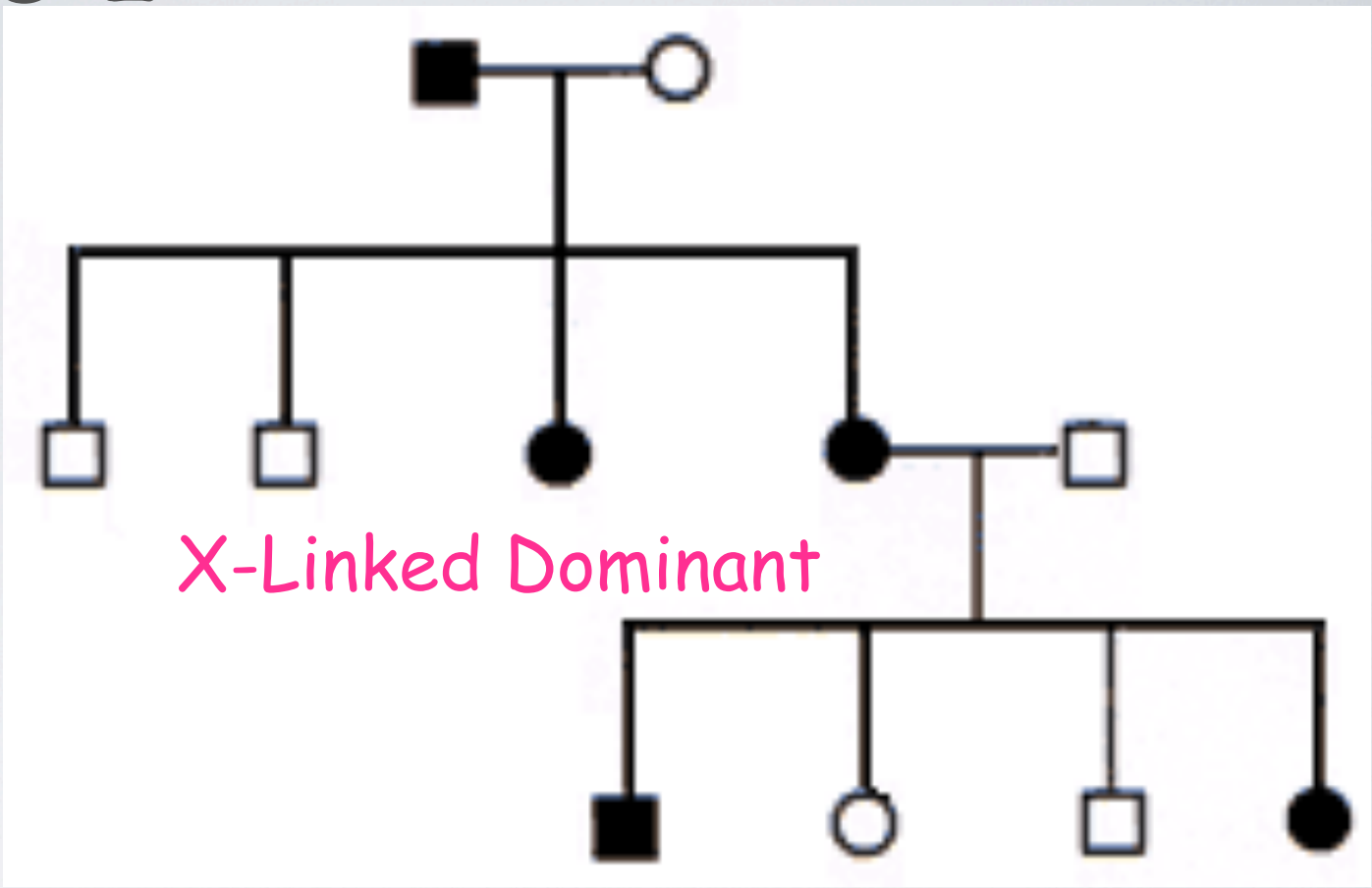

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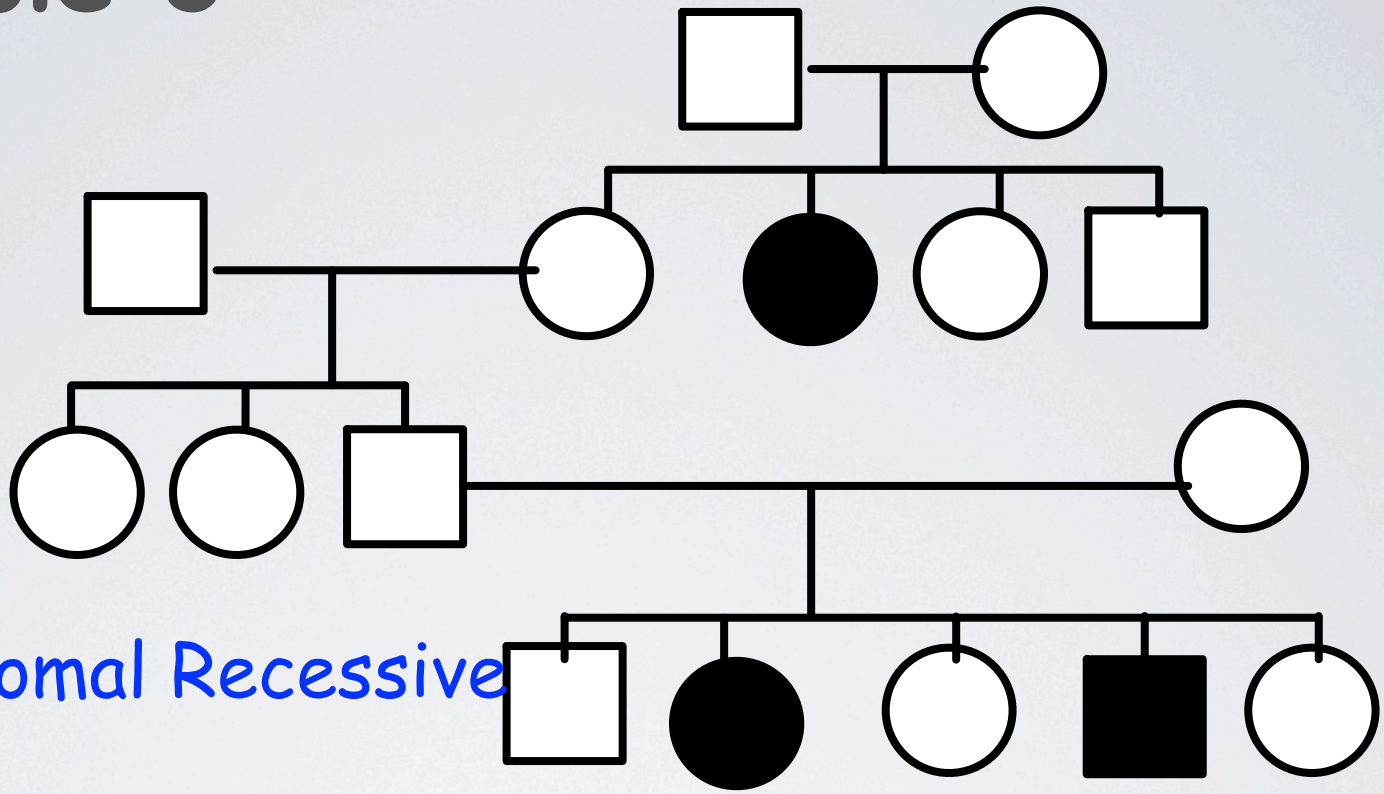

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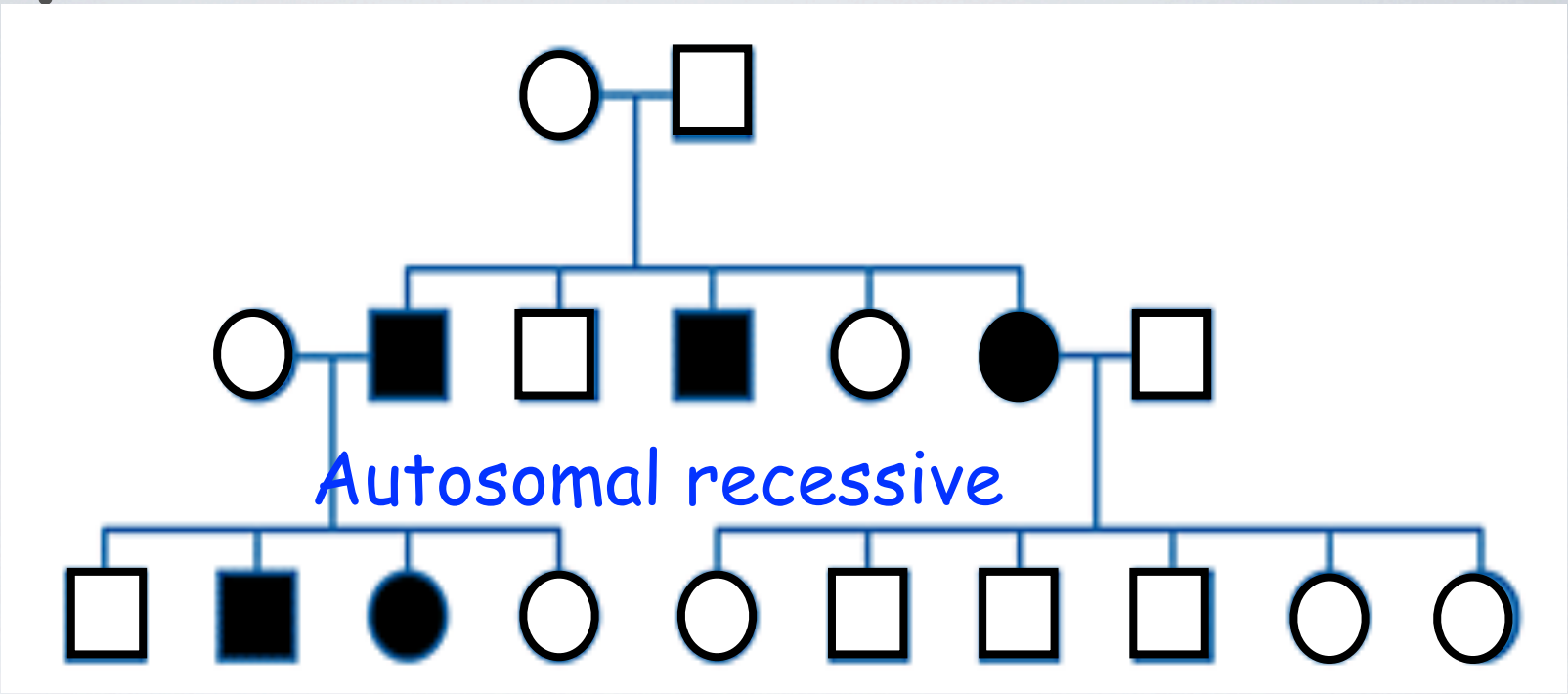

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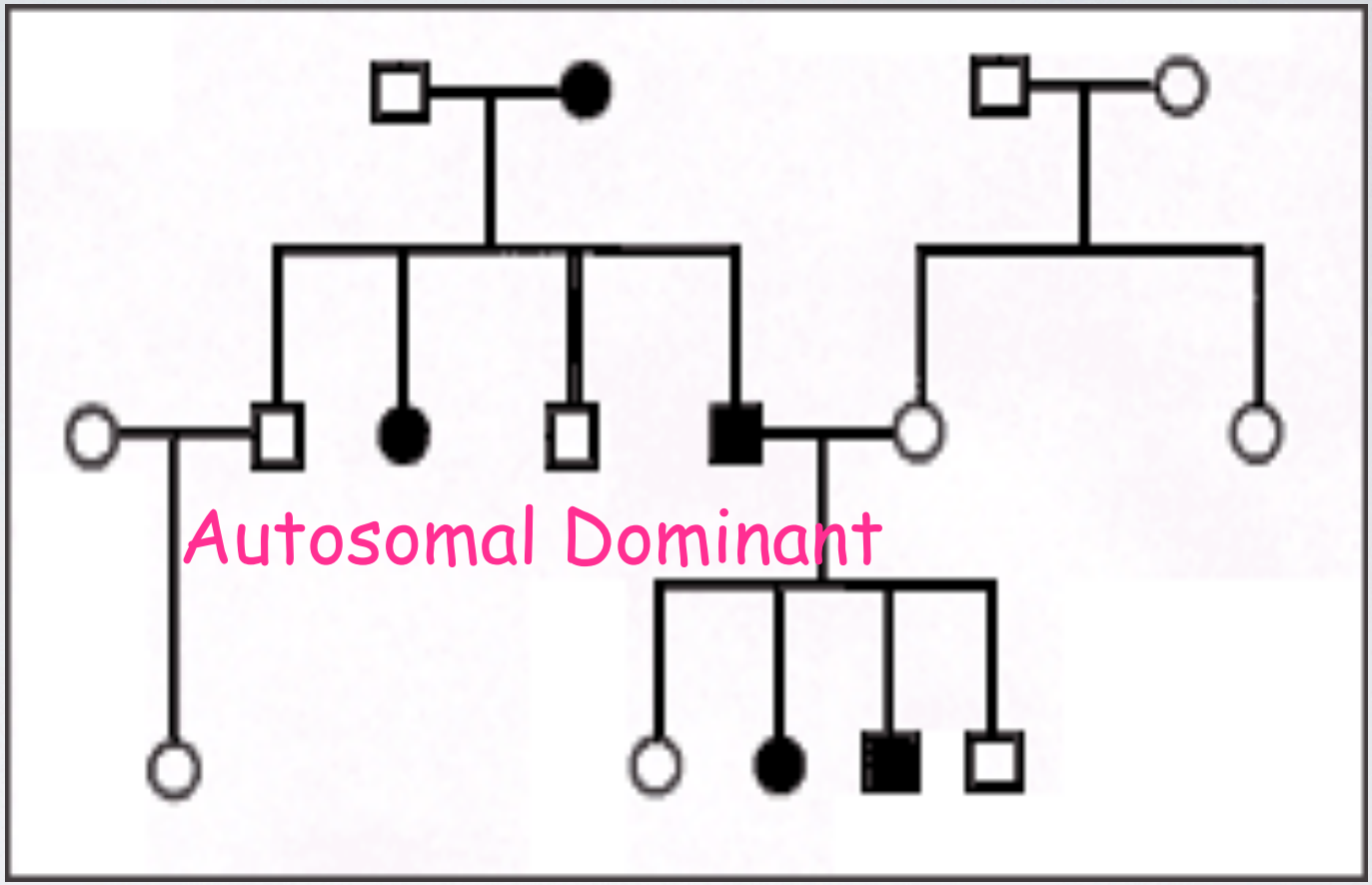

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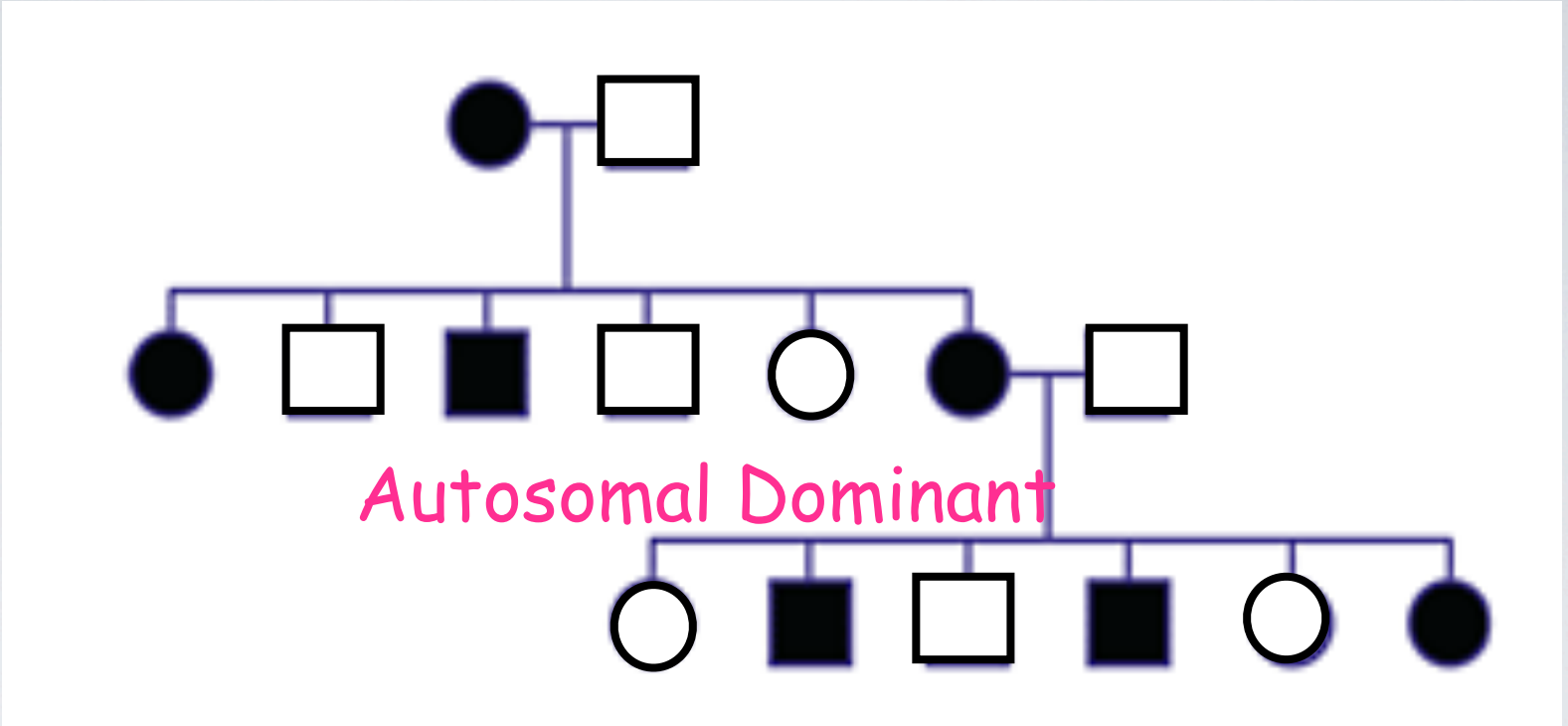

Appears equally In both sexes so autosomal
In every generation so dominant

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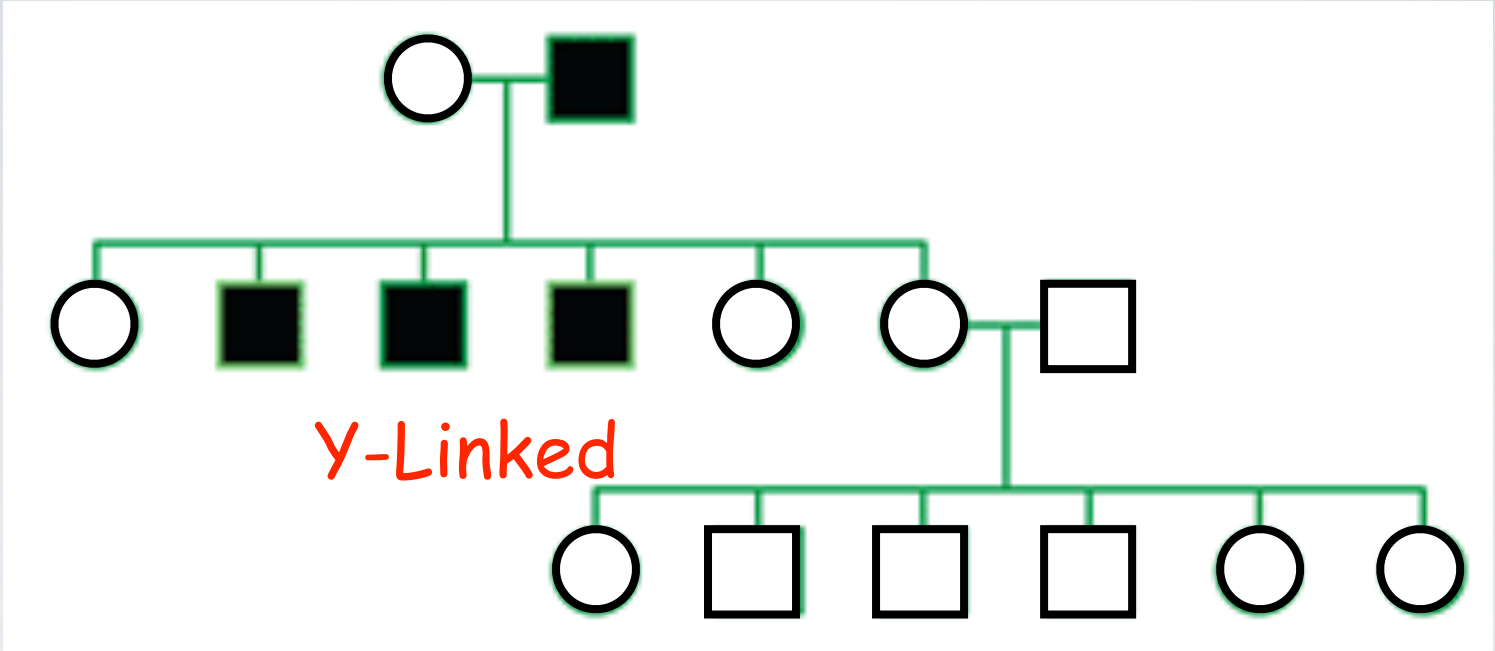

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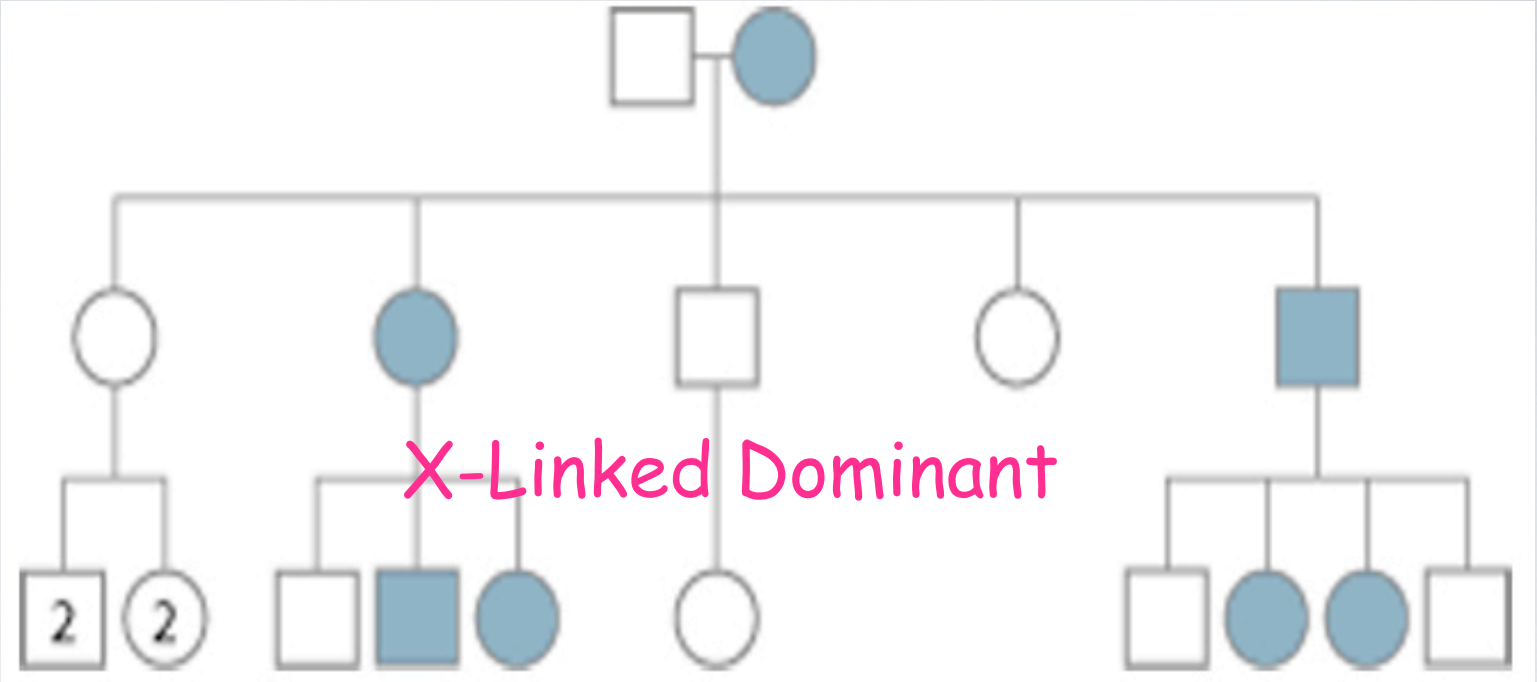

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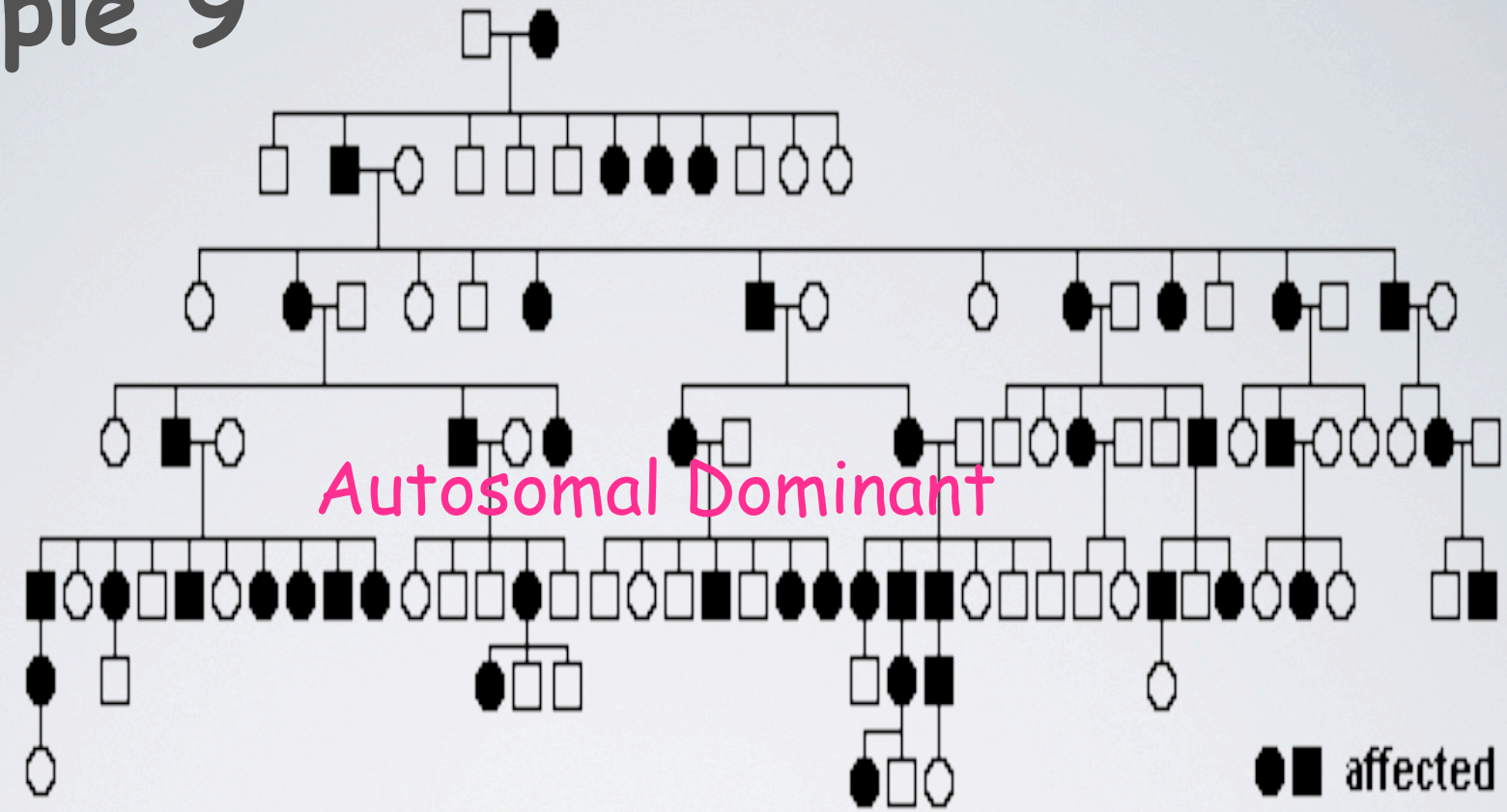

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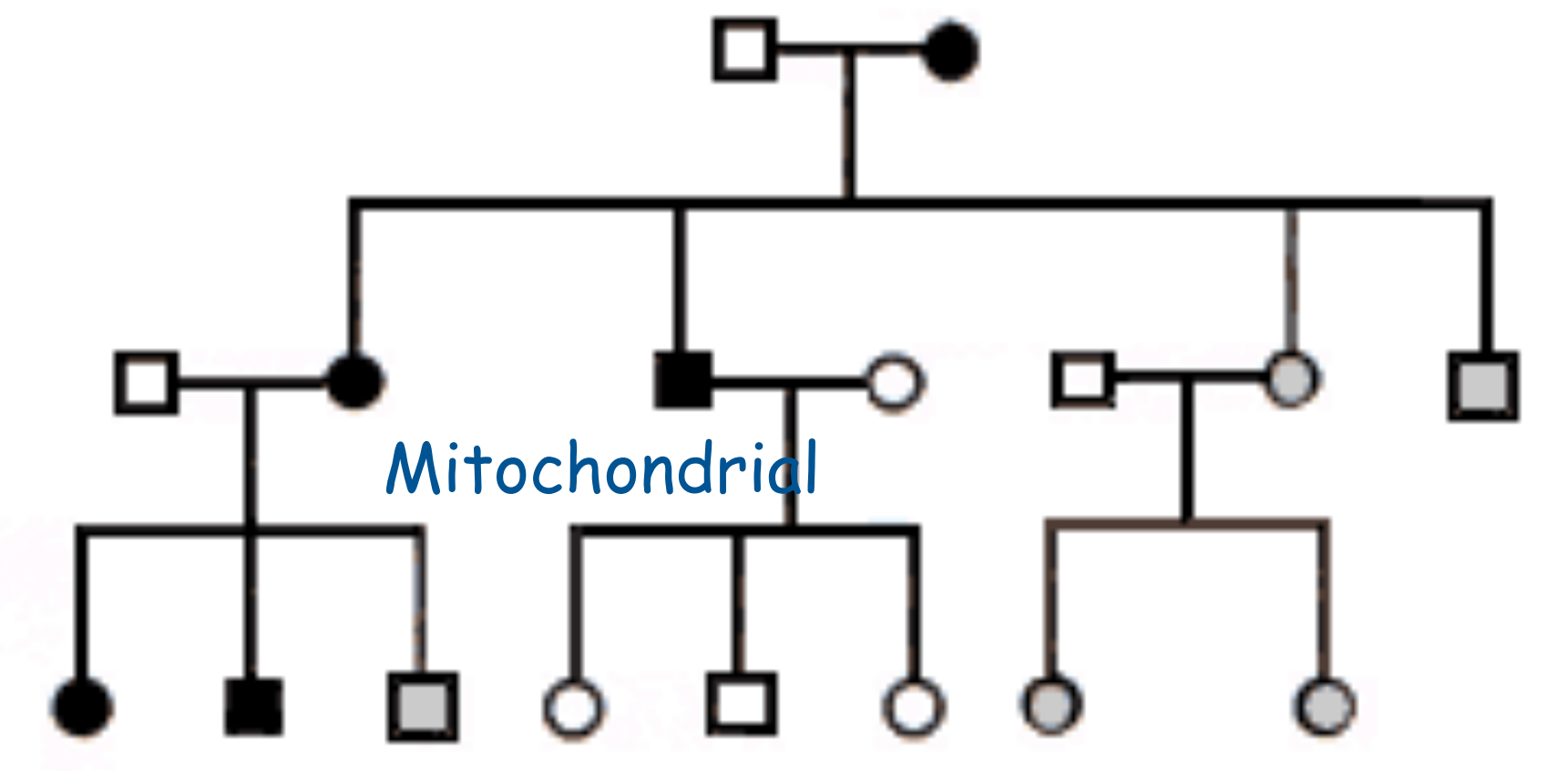

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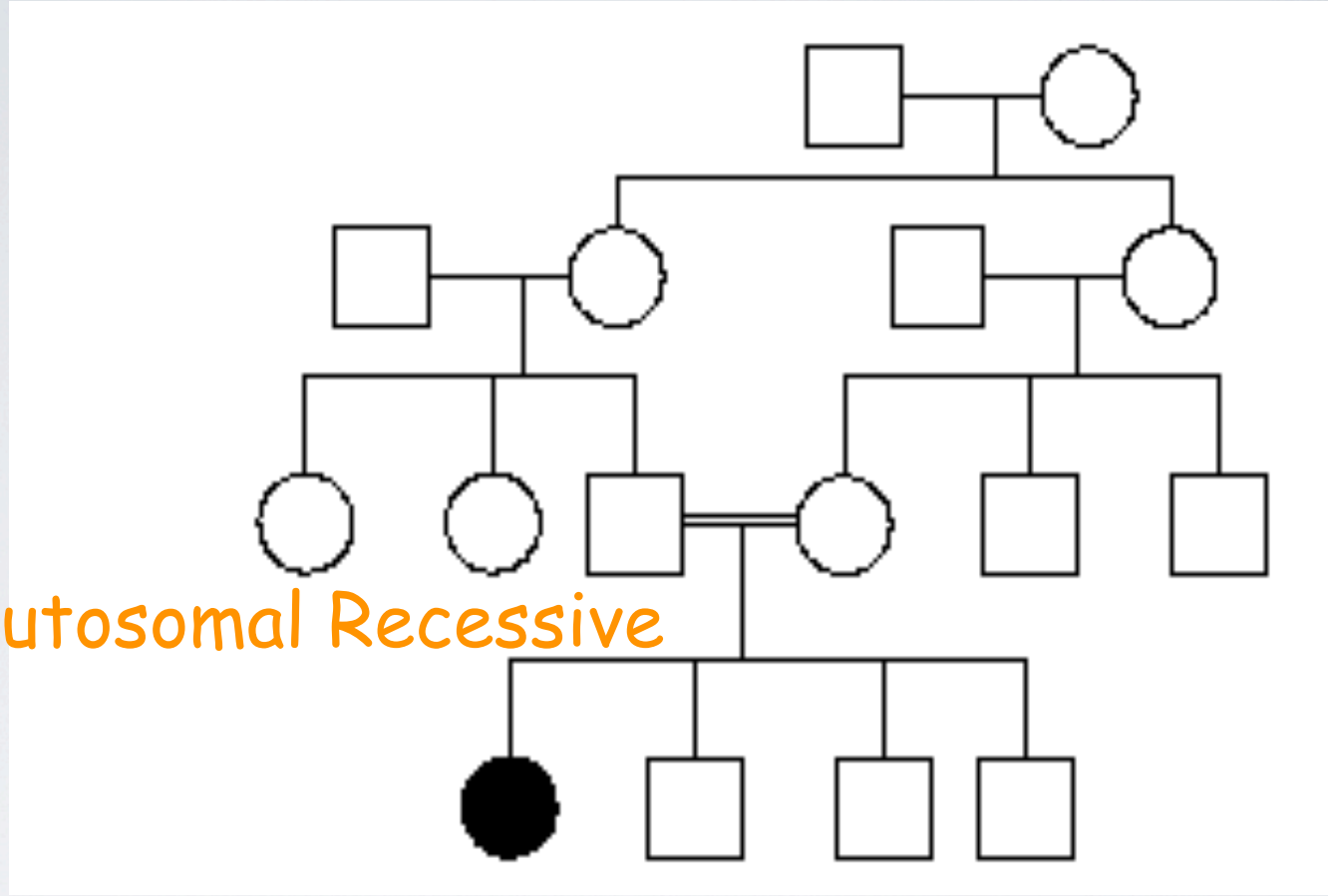

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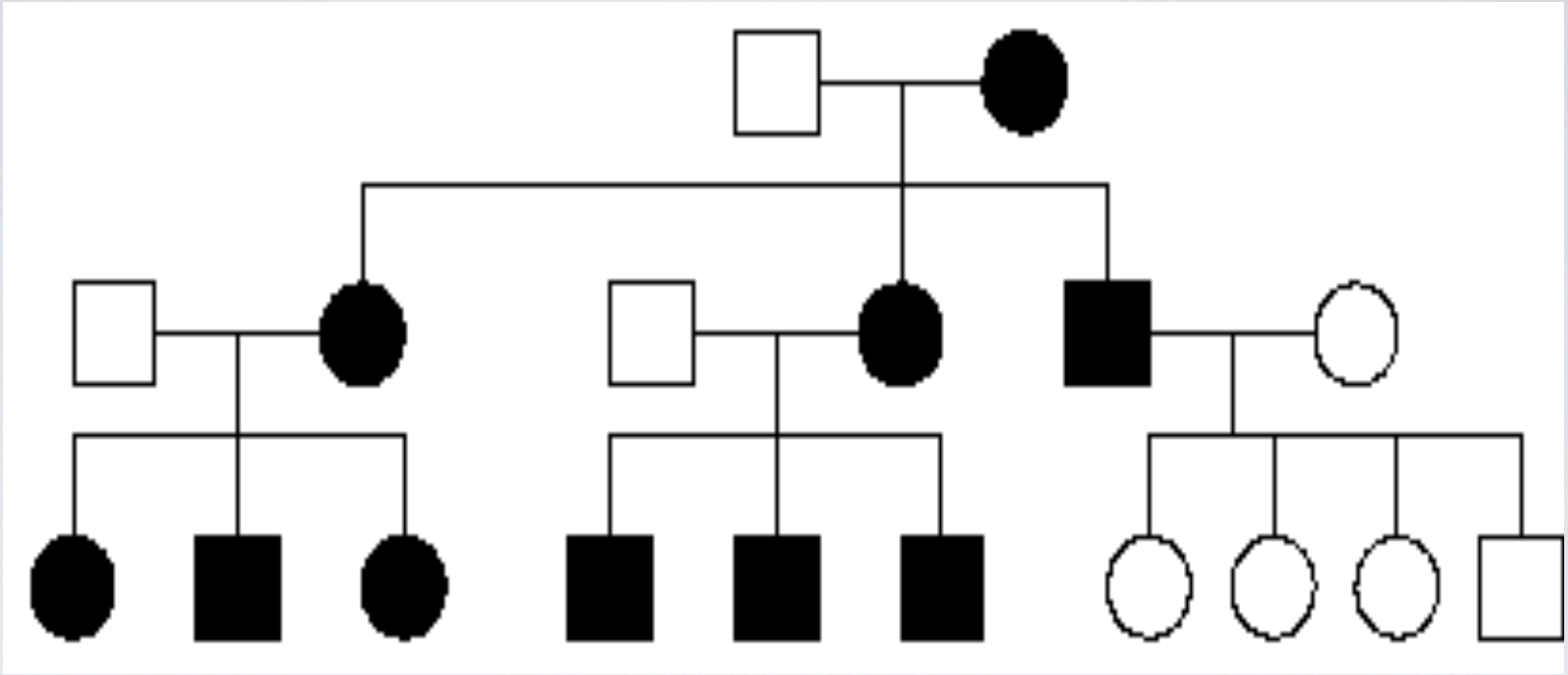

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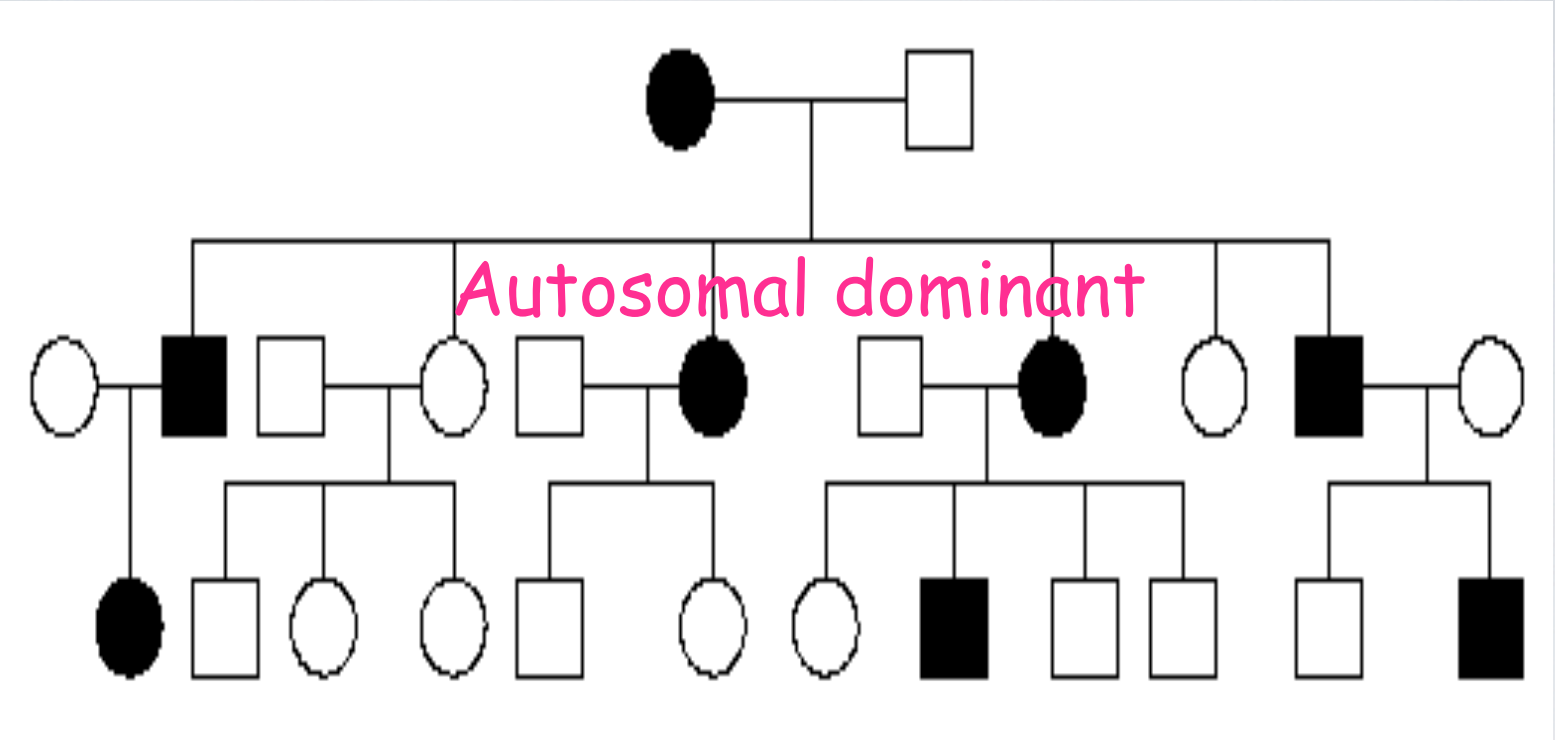

In every generation: DOMINANT

In males and females: Autosomal

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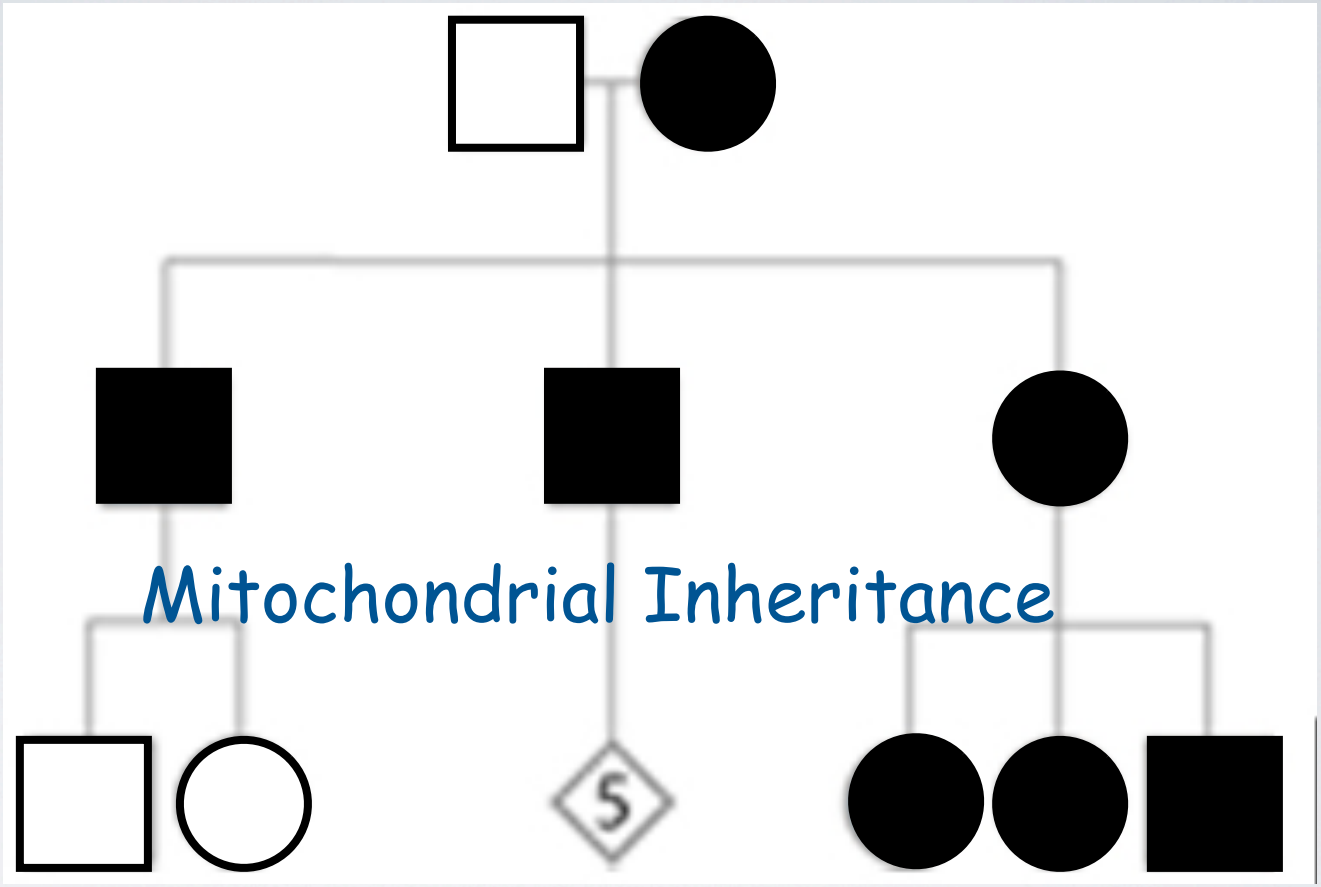

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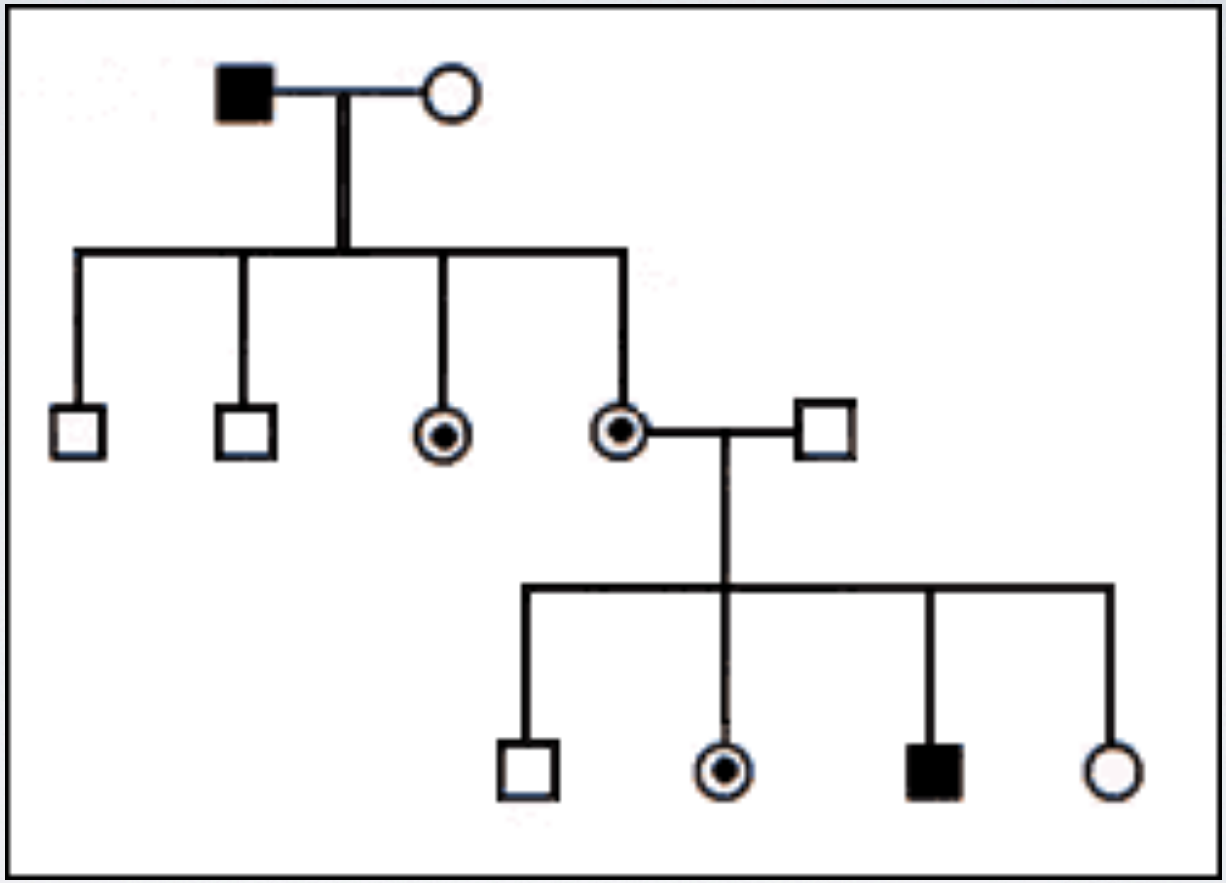
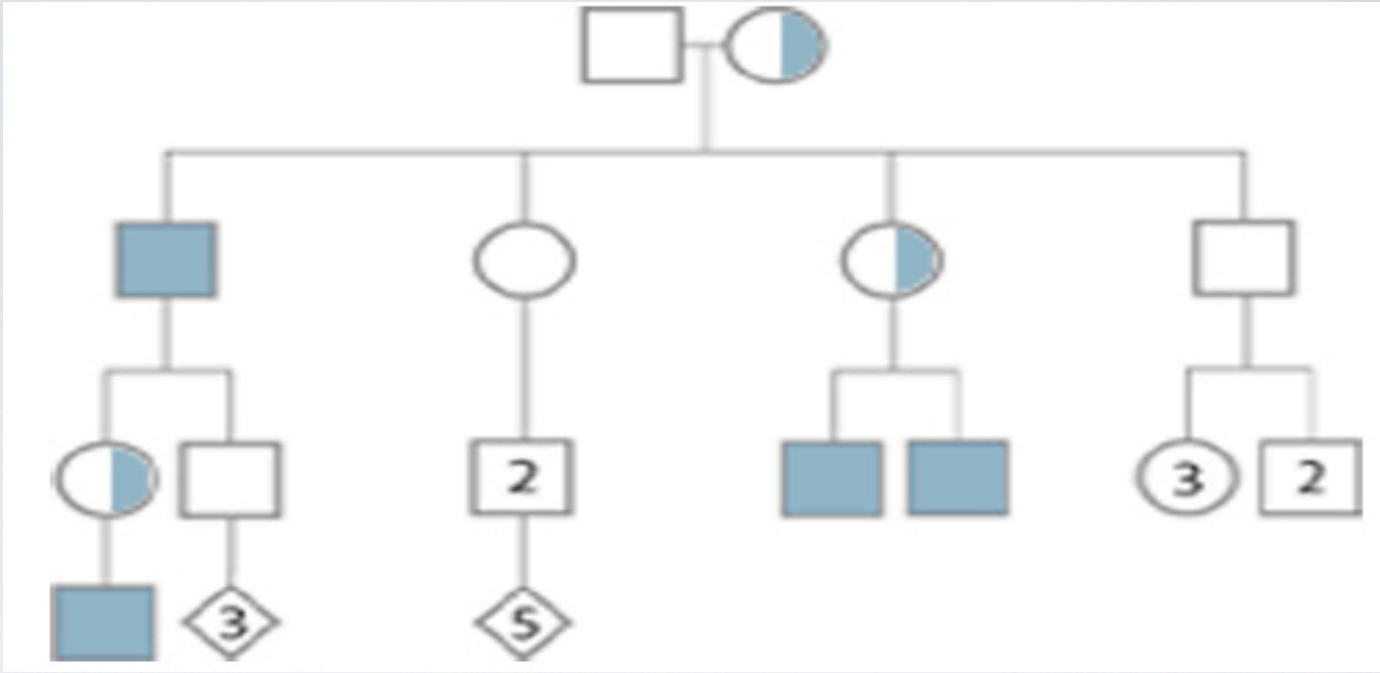


X-linked Recessive

Example 16



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Answers:

1	X-Linked Recessive
2	X-Linked Dominant
3	Autosomal Recessive
4	Autosomal Recessive
5	Autosomal Dominant
6	Autosomal Dominant
7	Y-Linked
8	X-Linked Dominant
9	Autosomal Dominant
10	Mitochondrial
11	Autosomal Recessive
12	Mitochondrial
13	Autosomal Dominant
14	Mitochondrial
15	X-Linked Recessive
16	X-Linked Recessive