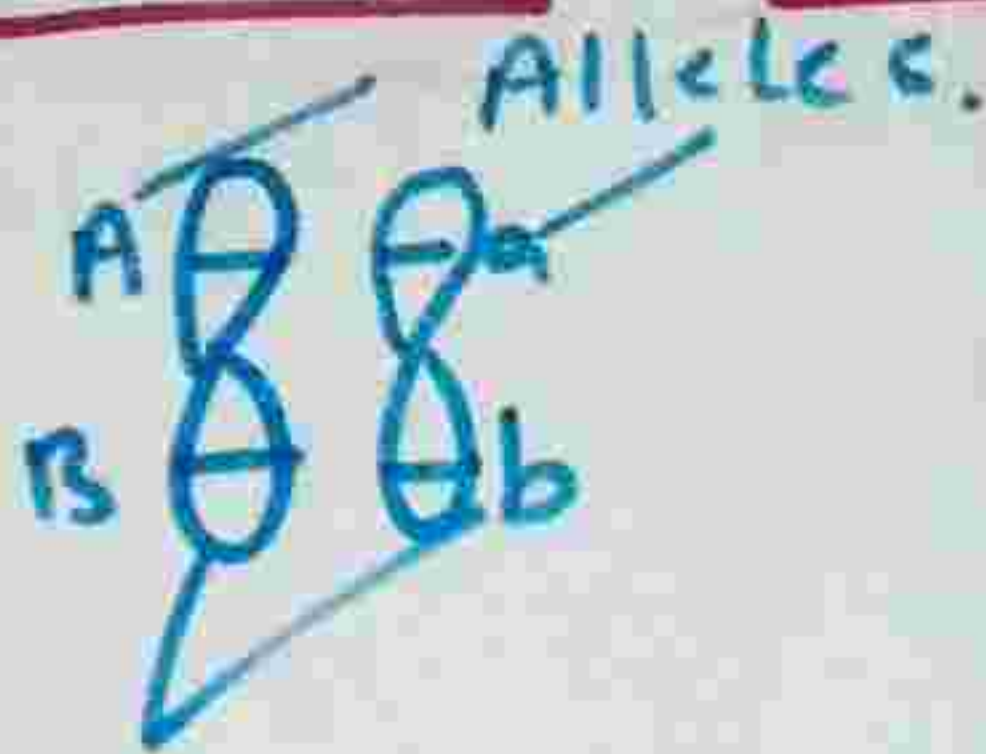
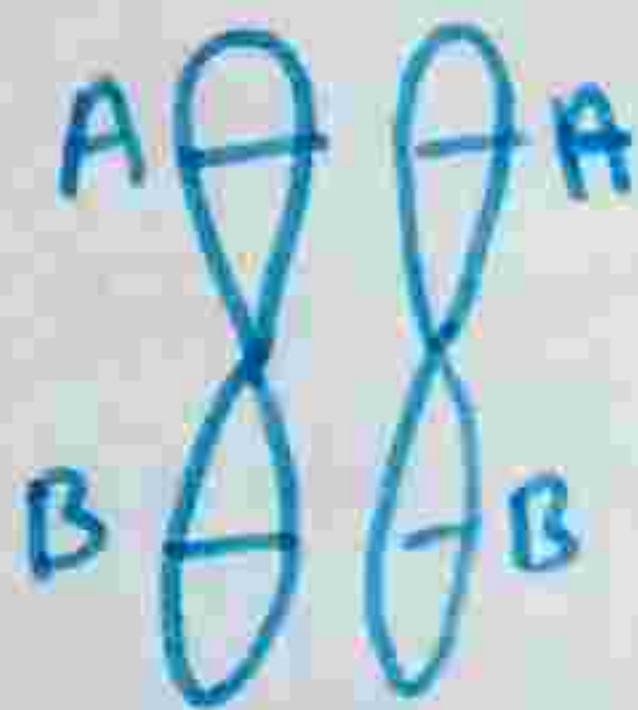


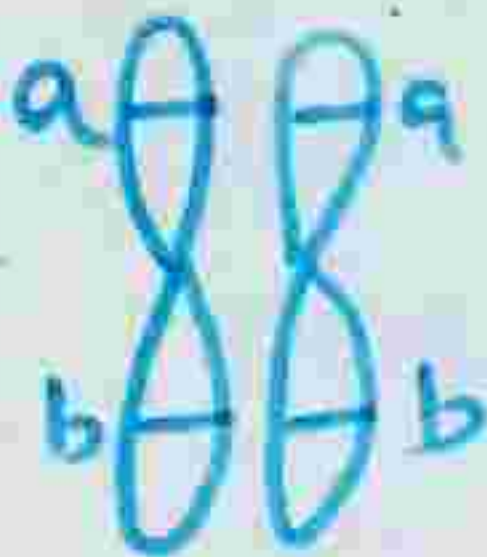
Concept of Dominance



Homologous chromosome.



or



Homozygous



Heterozygous.

Gene $\xrightarrow{\text{Information}}$ Enzyme

Genes are located on chromosome.

- Genes exist in two Allelic form.
- The Allele which is able to express itself in Heterozygous form is Dominant Allele.
- Dominant Allele is original Allele.

→ Recessive Allele is developed due to Mutation.

→ Due to Mutation allele get Modified.

→ Gene expresses it self in the form of enzyme and control Metabolic activity.

→ When Mutation occur then three possibilities are there.

1) Normal or less efficient enzyme will be formed.

2) Non functional enzyme will be formed.

3) No enzyme will be formed.

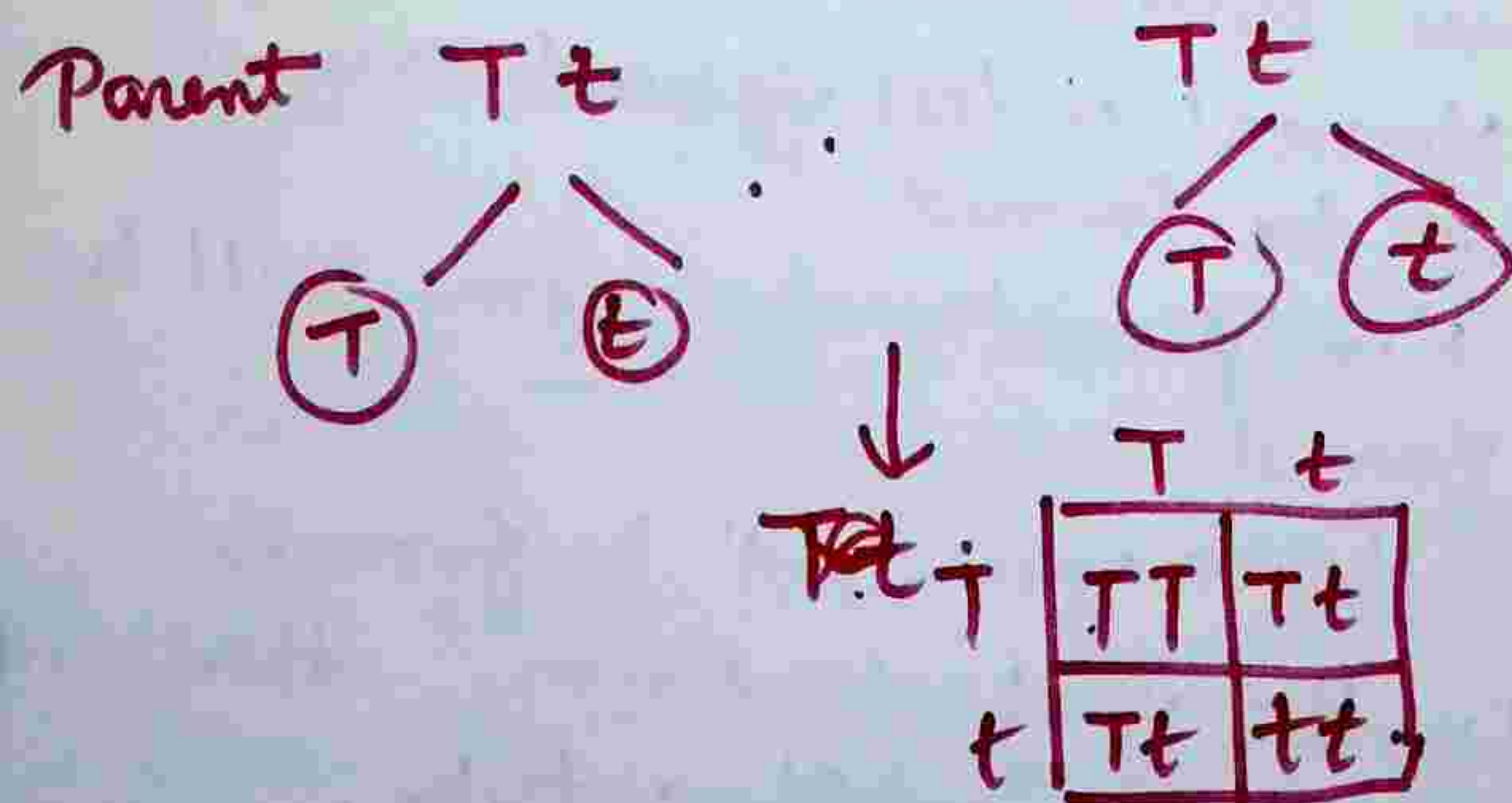
→ In the first condition there will be no effect on Phenotype.

→ In Second and Third condition the Phenotype will be affected.

→ If the Modified allele is

Present in Homozygous form then only it will be expressed i.e. in the absence of unmodified allele the modified will be expressed.

→ The unaffected or Functional Allele is called Dominant Allele. The Modified allele is called recessive allele.



3 Dominant: 1 Recessive
Tall Dwarf

This is concept of Dominance.

Polygenic Inheritance

→ When one character is controlled by many genes or more than one gene then it is called Polygenic inheritance.

→ In Polygenic inheritance expression is due to cumulative effect of genes therefore it is also called Quantitative inheritance.

→ Polygenic inheritance was first described by Nilson Ehle in Kernel colour of wheat.

→ Nilson Ehle said that Kernel colour of wheat is regulated by two pairs of gene.

RRBB

Red



rrbb

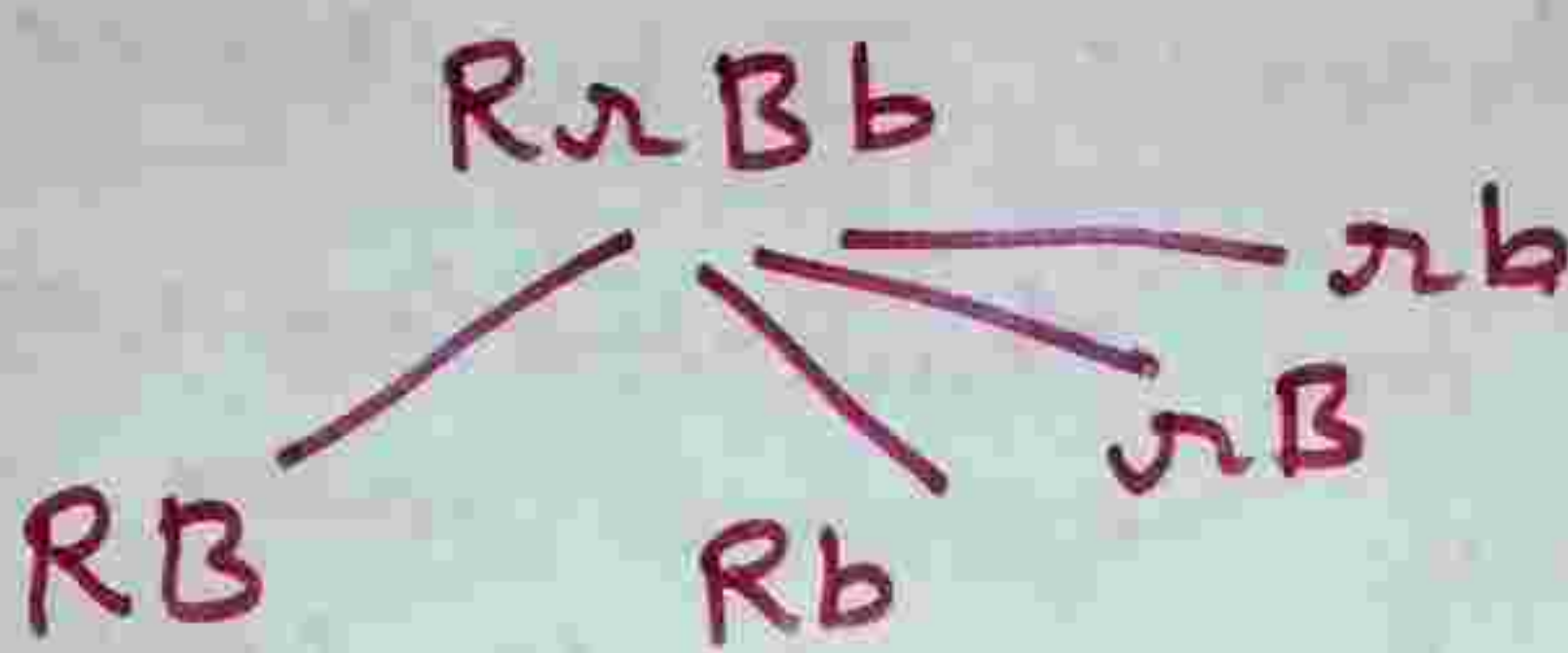
White



RrBb

2020-8-27 01:20

Interm. ed. 10



	RB	Rb	rB	rb
RB	$RRBB$ Full red	$RRBb$ Light red	$RrBB$ Light R.	$RrBb$ Intermed.
Rb	$RRBb$ Light R.	$RRbb$ Intermed.	$RrBb$ Intermed.	$Rrbb$ very light red
rB	$RrBB$ Light red	$RrBb$ Intermed.	$rrBB$ Intermed.	$rrBb$ very light
rb	$RrBb$ Intermed.	$Rrbb$ very light red	$rrBb$ very light red	$rrbb$ white

More is no of dominant gene.
 whether R or B more will be
 redness.

Full red Light red Intermed. very light
 $1 : 4 : 6 : 4 : 1$ white

No of 4 : 3, 2, 1, 0

dominant
gene

Human skin colour

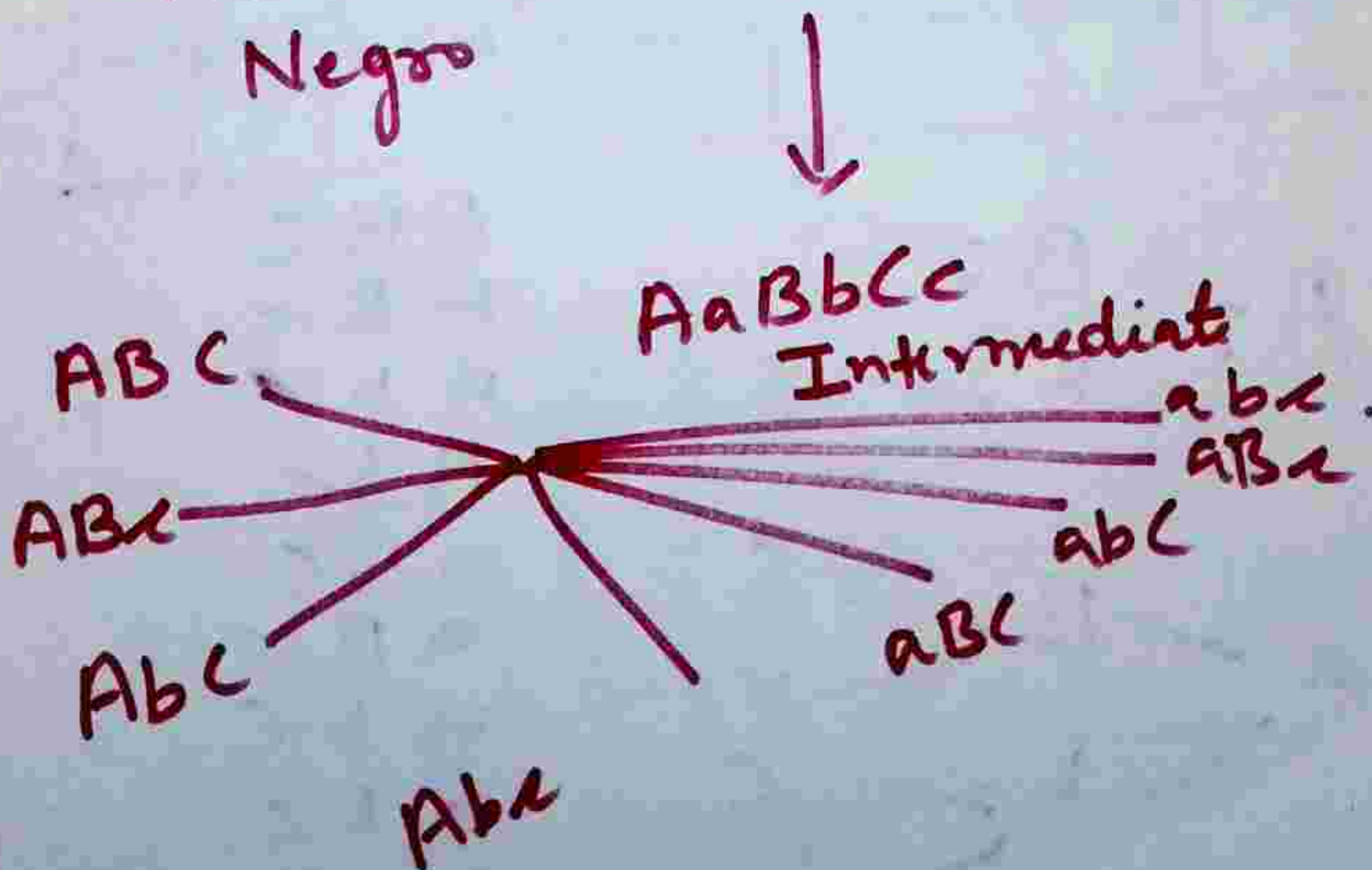
→ Studied first by Davenport. Acc to them skin colour in human is controlled by two pairs of genes. and it shows 5 phenotypic varieties in human skin colour

→ In 1944 Hughes recognised 7 phenotypic classes and told that three genes control the skin colour character

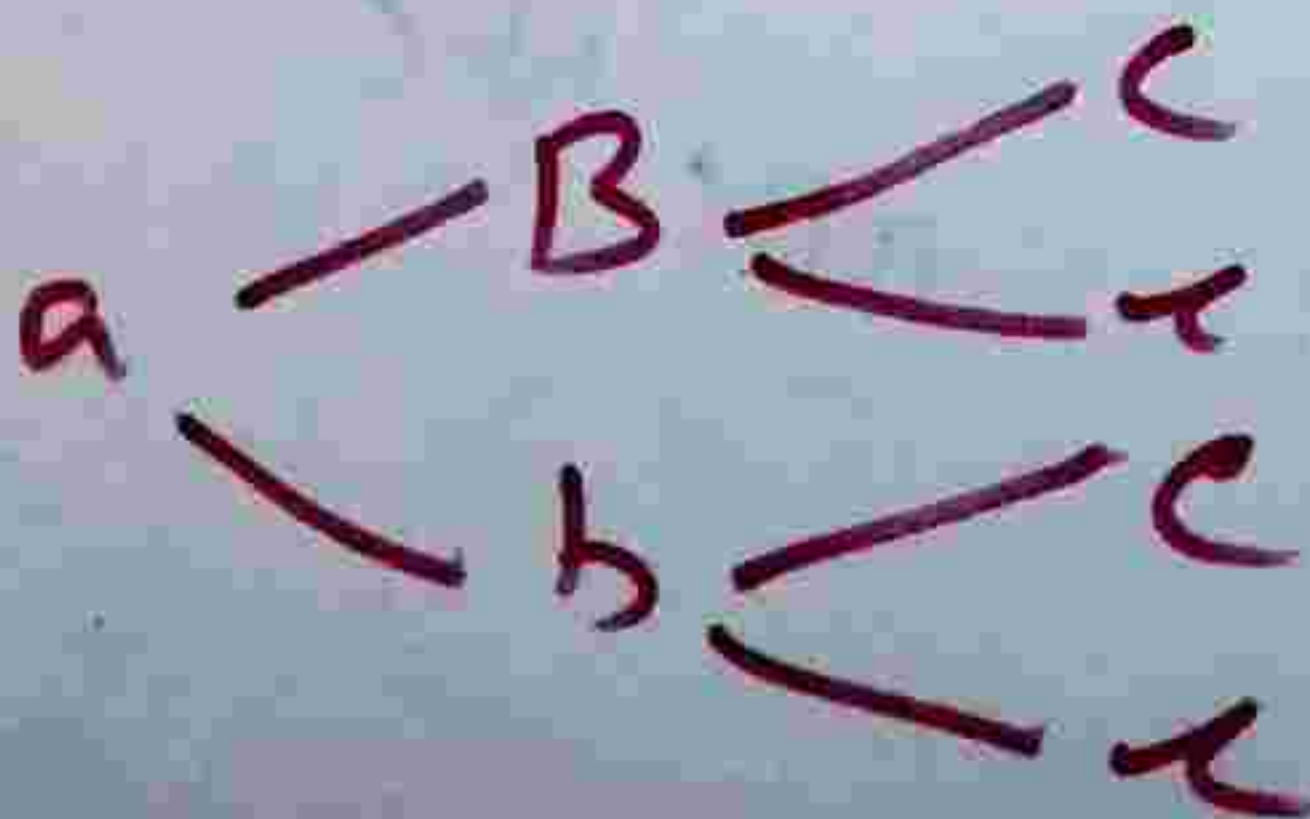
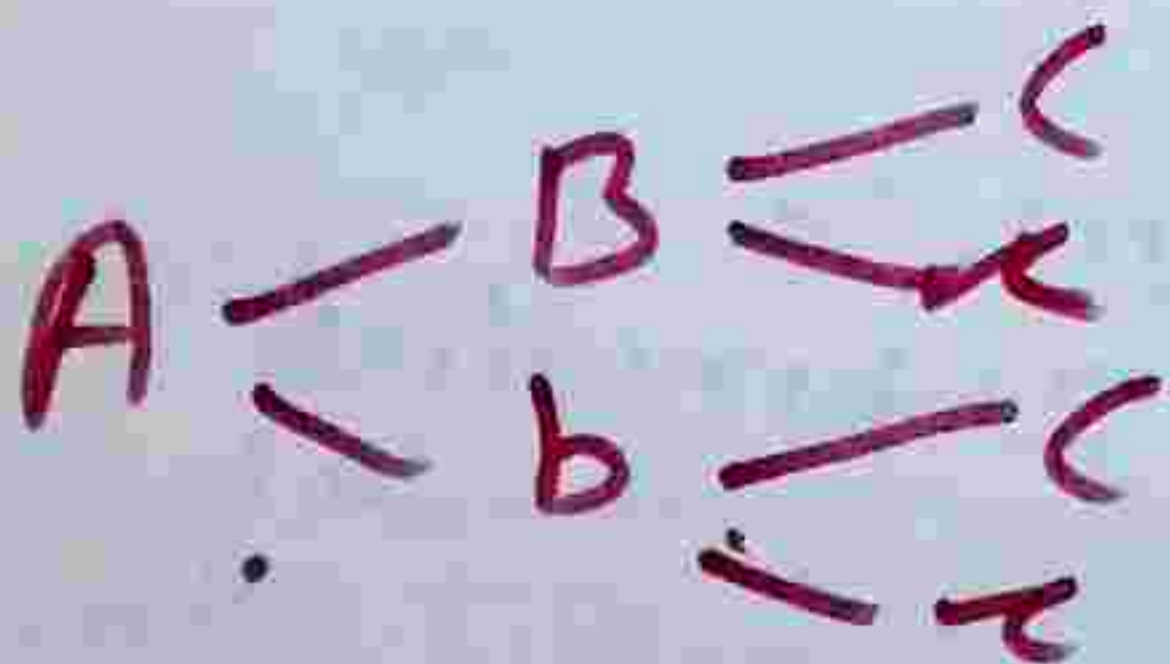
ABC
Human

aabbcc
Albino

AABBCC
Negro



	ABC	ABc	AbC	Abc	aBC	abC	abc
ABC	AABBCC	AABBcc	AABbCC	AABbcc	AaBBCC	AaBBcc	AaBbCC
ABc	AABBCC	AABBcc	AABbCC	AABbcc	AaBBCC	AaBBcc	AaBbCC
AbC	AABBCC	AABBcc	AABbCC	AABbcc	AaBBCC	AaBBcc	AaBbCC
Abc	AABBCC	AABBcc	AABbCC	AABbcc	AaBBCC	AaBBcc	AaBbCC
aBC	AaBBCC	AaBBcc	AaBbCC	AaBbcc	aaBBCC	aaBBcc	aaBbCC
abC	AaBBCC	AaBBcc	AaBbCC	AaBbcc	aaBBCC	aaBBcc	aaBbCC
abc	AaBbCC	AaBbcc	AabbCC	Aabbcc	aaBbCC	aaBbcc	aabbCC



ABC

A B τ

A b c

$A b \tau$

ABC

α β γ

 $a \cdot b \cdot c$

a b c

1 : 6 : 15 : 20 : 15 : 6 : 1
 Negro Albino

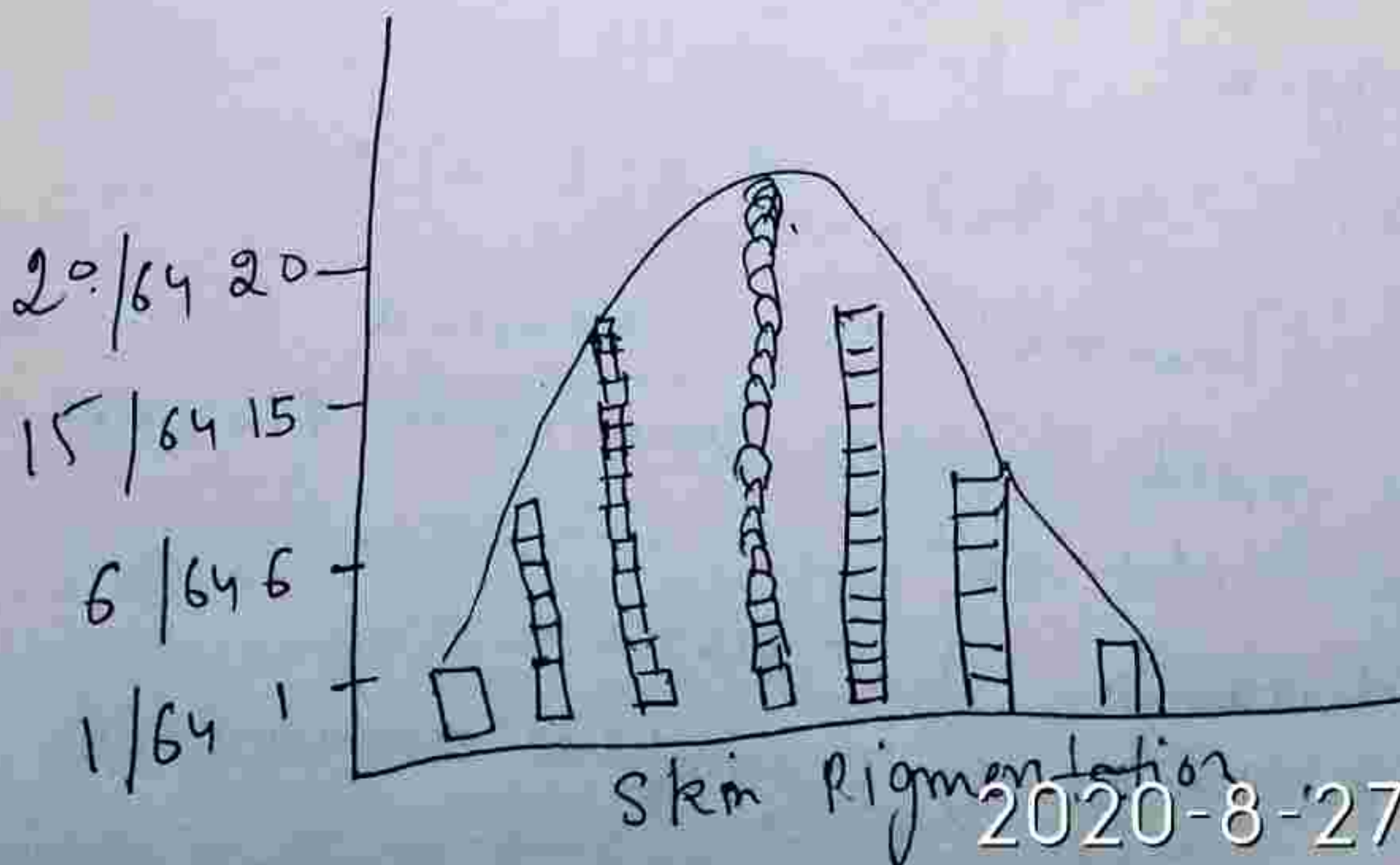
No of dominant genes

6 5 4 3 2 1 0

More will be no of dominant gene more dark complexion. Less is no of ~~gene~~ dominant gene Light complexion.

→ Human and Height and colour also show same result.

→ Total Phenotypes 7.



2020-8-27 01:20