

NON-MENDELIAN SITUATIONS

8. Cross a person with AB blood with a person with heterozygous type A.

a.) What are ALL of the possible genotypes for this cross?

AA, AO, BO & AB (4)

	A	O
A	AA	AO
B	AB	BO

b.) What is the ratio of type A to type B?

2:1

c.) What kind of Non-Mendelian genetic condition is type AB blood an example of?

CODOMINANCE

9. Show and explain why crossing snapdragon flowering plants is NOT an example of "blending."

RR = red, Rr = pink, rr = white

When you cross a red flower plant w/ a white flower plant:

RR x rr

100% of F₁ is pink (heterozygous)

	r	r
R	Rr	Rr
R	Rr	Rr

F₁

But when you cross 2 individuals from the F₁:

Rr x Rr

	R	r
R	RR	Rr
r	Rr	rr

*YOU SEE THE ORIGINAL RED & WHT FLOWERS AGAIN!

10. Define the term "polygenic" AND provide one example of a human situation that is polygenic.

A polygenic trait is a trait that relies on more than one pair of alleles on many different genes.

Ex: Human Eye color is one example b/c it is controlled by gene EYCL1 on chromosome 19 & gene EYCL3 on 15.

11. Define the term "pleiotropic" AND provide one example of a human situation that is pleiotropic.

A pleiotropic situation is when ONE gene affects many different traits. Ex: Sickle Cell Anemia - the sickle cell gene changes the RBC's shape which in turn causes clotting, lack of O₂ in tissues, exhaustion & bruising.