

NAME KeyPUNNETT SQUARES #2INCOMPLETE DOMINANCE:

In Four O'Clock plants RED FLOWERS (R) are INCOMPLETELY DOMINANT over white (r) flowers. Heterozygous plants show a BLENDED INTERMEDIATE phenotype of PINK flowers.

MAKE A CROSS WITH 2 HETEROZYGOUS FOUR O'CLOCK PLANTS.

	R	r
R	RR	Rr
r	Rr	rr

POSSIBLE Offspring

Genotypes

RR
Rr
rr

Phenotypes

red
pink
white

IF the red allele in Four-o'clocks WAS COMPLETELY DOMINANT over the white allele, what would the phenotype be for a plant with a Rr genotype? red

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You are exploring the jungle and find a new species of plant. Some of the plants have red flowers and some have yellow flowers. You cross a red flowering plant with a yellow flowering plant and all the offspring have orange flowers. You might assume that the alleles for flower color in this plant show blend

- A. complete dominance
 B. incomplete dominance
 C. codominance

If the red and yellow alleles in the mystery jungle plant above showed CODOMINANCE instead, what might you expect a plant with one red allele and one yellow allele to look like?

- A. It would have all red flowers
 B. It would have all blue flowers
 C. It would have red and yellow flowers together on one plant
 D. It wouldn't make any flowers because it is a mutant.

both
shown

BLOOD TYPES:

In the ABO blood type system the A and B alleles are DOMINANT to the O allele and A and B are CO-DOMINANT with each other.

Make a cross between a mom with AO genotype and a dad with BO genotype.

	A	O
B	AB	BO
O	AO	OO

What are the possible GENOTYPES of the offspring?

AB AO BO OO

What is the probability the offspring will have

A type blood 25%

B type blood 25%

O type blood 25%

AB type blood 25%

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Make a cross between a mom with AO genotype and a dad with BB genotype.

	A	O
B	AB	Bo
B	AB	Bo

What are the possible genotypes of the offspring?

AB BO

What is the probability the offspring will have

A type blood 0%

B type blood 50%

O type blood 0%

AB type blood 50%

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Make a cross between a mom with AA genotype and a dad with OO genotype.

	A	A
O	Ao	Ao
O	Ao	Ao

What are the possible genotypes of the offspring?

Ao

What is the probability the offspring will have

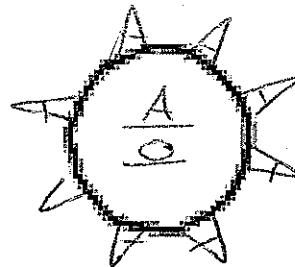
A type blood 100%

B type blood 0%

O type blood 0%

AB type blood 0%

Draw a picture of what the blood cells from the offspring from this cross would look like.



You are working in the Emergency room and a bleeding patient with type B blood is brought in. You need to give him blood, but the hospital is all out of type B. Circle ALL the types of blood could you safely give him instead.

A

AB

O



EXPLAIN your choices B person would see A + AB

as different

O is universal donor

What if the bleeding patient had type AB blood and the hospital was out of AB blood. Circle ALL the types of blood could you safely give him.

A

B

O



EXPLAIN your choices. AB is universal recipient

can receive all blood types

JERRY SPRINGER GENETICS:

Wanda tells Jerry Springer that she thinks either Ralph or Fred could be the father of her baby.

Wanda's genotype is AO. Wanda's baby has type O blood.

Ralph's genotype is AB. Fred's genotype is BO.

Make two crosses to show who could be the father of Wanda's baby.

Ralph X Wanda

	A	O
A	AA	Ao
B	AB	Bo

Fred X Wanda

	A	O
B	AB	Bo
O	Ao	oo

Is it possible for Ralph to be the baby's father? YES NO

Is it possible for Fred to be the baby's father? YES NO

Does this absolutely PROVE that Fred IS the baby's father? YES NO

(Hint: Look at your answer to the last question, if you aren't sure)

EXPLAIN your answer Possible but doesn't prove it's him
Others could be dad too

IF Wanda's baby has type O blood, what are the possible genotypes for men who COULD BE the father of Wanda's baby ?
anyone with an o

BO Ao oo