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Period: _____

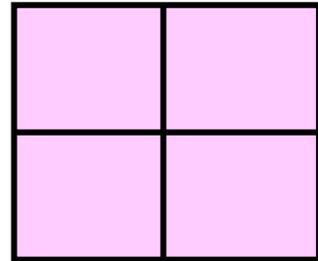
Date: _____

CODOMINANT/INCOMPLETE DOMINANCE PRACTICE WORKSHEET

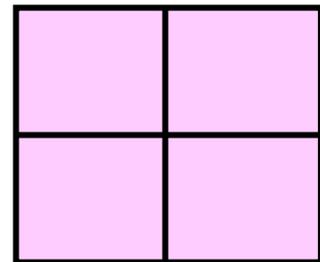
1. Explain the difference between incomplete and codominance.

Co-Dominance Problems

2. In a certain fish, blue scales (BB) and red scales (bb) are codominant. When a fish has the hybrid genotype, it has a patchwork of blue and red scales. (Use the letter B)
 - a. What is the genotype for blue fish? _____
 - b. What is the genotype for red fish? _____
 - c. What is the genotype for patchwork fish? _____
3. What happens if you breed a patchwork fish with a fish that only has Blue Scales?
 - a. What is the probability of having fish with red scales? _____%
 - b. What is the probability of having fish with patchwork scales? _____%



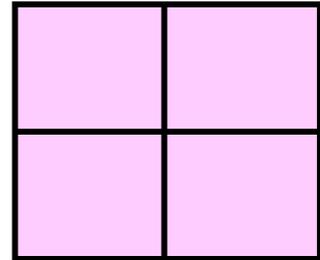
4. Two patchwork fish are crossed. What is the probability that they will have patchwork fish?
_____%



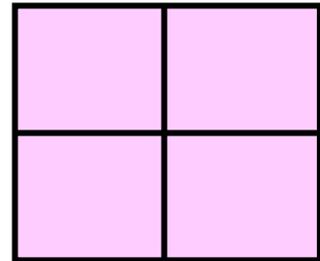
5. Two short-tailed (Manx) cats are bred together. They produce three kittens with long tails, five short tails, and two without any tails. From these results, how do you think tail length in these cats are inherited? Show the genotypes for both the parents and the offspring to support your answer.

Incomplete Dominance Problems

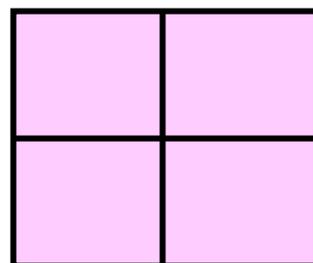
6. In snapdragons, flower color is controlled by incomplete dominance. The two alleles are red (R) and white (r). The heterozygous genotype is expressed as pink.
- What is the phenotype of a plant with the genotype RR? _____
 - What is the phenotype of a plant with the genotype Rr? _____
 - What is the phenotype of a plant with the genotype rr? _____
7. A pink-flowered plant is crossed with a white-flowered plant. What is the probability of producing a pink-flowered plant? _____%



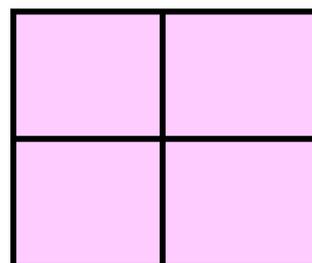
8. What cross will produce the most pink-flowered plants? Show a Punnett square to support your answer and explain.



9. In Andalusian fowls, black individuals (BB) and white individuals (bb) are homozygous. A homozygous black bird is crossed with a homozygous white bird. The offspring are all bluish-gray. Show the cross as well as the genotypes and phenotypes of the parents and offspring.



10. What results if a black individual is crossed with a bluish-gray individual? (SHOW YOUR WORK)



Codominance (Blood types)

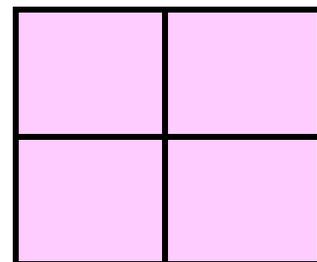
Human blood types are determined by genes that follow the CODOMINANCE pattern of inheritance. There are two dominant alleles (I^A and I^B) and one recessive allele (i).

Blood Type (Phenotype)	Genotype	Can donate blood to:	Can receive blood from:
O	ii	A,B,AB and O (universal donor)	O
AB	$I^A I^B$	AB	A,B,AB and O (universal receiver)
A	$I^A I^A$ or $I^A i$	AB, A	O,A
B	$I^B I^B$ or $I^B i$	AB,B	O,B

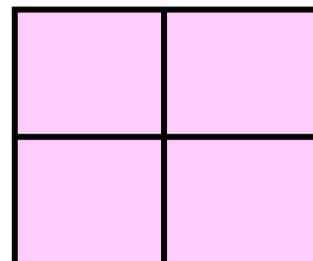
1. Write the genotype for each person based on the description:

- a. Homozygous for the "B" allele _____
- b. Heterozygous for the "A" allele _____
- c. Type O _____
- d. Type "A" and had a type "O" parent _____
- e. Type "AB" _____
- f. Blood can be donated to anybody _____
- g. Can only get blood from a type "O" donor _____

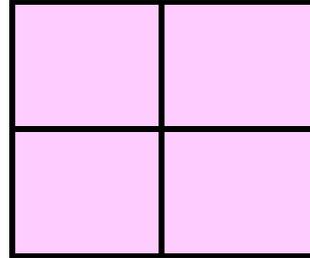
2. Pretend that Drake is homozygous for the type B allele, and Nicki Minaj is type "O." **What are all the possible blood types of their baby?** (show your work)



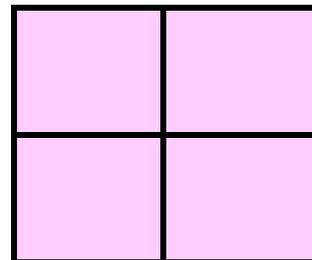
3. Draw a Punnett square showing all the possible blood types for the offspring produced by a type "O" mother and an a Type "AB" father



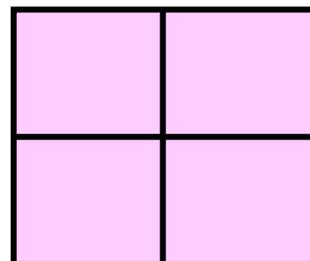
4. Mrs. Clink is type "A" and Mr. Clink is type "O." They have three children named Matthew, Mark, and Luke. Mark is type "O," Matthew is type "A," and Luke is type "AB." Based on this information: SHOW WORK TO PROVE YOUR ANSWERS!
- Mr. Clink must have the genotype _____
 - Mrs. Clink must have the genotype _____ because _____ has blood type _____
 - Luke cannot be the child of these parents because neither parent has the allele _____.



5. Two parents think their baby was switched at the hospital. Its 1968, so DNA fingerprinting technology does not exist yet. The mother has blood type "O," the father has blood type "AB," and the baby has blood type "B."
- Mother's genotype: _____
 - Father's genotype: _____
 - Baby's genotype: _____ or _____
 - Punnett square showing all possible genotypes for children produced by this couple
 - Was the baby switched?

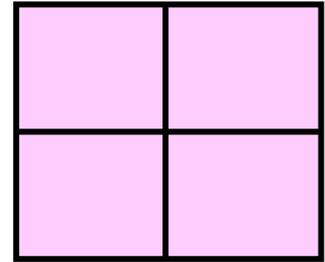


6. Two other parents think their baby was switched at the hospital. The mother has blood type "A," the father has blood type "B," and the baby has blood type "AB."
- Mother's genotype: _____ or _____
 - Father's genotype: _____ or _____
 - Baby's genotype: _____
 - Punnett square that shows the baby's genotype as a possibility:
 - Was the baby switched?



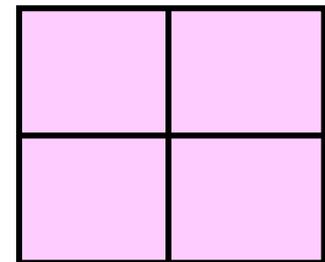
7. Based on the information in this table, which man **could not** be the father of the baby? Justify your answer with a Punnett square.

Name	Blood Type
Mother	Type A
Baby	Type B
Sammy the player	Type O
George the sleeze	Type AB
The waiter	Type A
The cable guy	Type B



8. Based on the information in this table, which man **could not** be the father of the baby? Justify your answer with a Punnett square.

Name	Blood Type
Mother	Type O
Baby	Type AB
Bartender	Type O
Guy at the club	Type AB
Cabdriver	Type A
Flight attendant	Type B



9. Explain why blood type data cannot prove who the father of a baby is, and can only prove who the father is not.