Blood Type Codominance Practice Problems 2

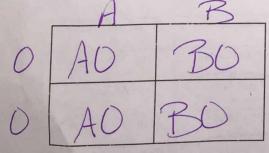
Human blood types are determined by genes that follow the <u>CODOMINANCE</u> pattern of inheritance. There are two equally dominant alleles (A and B) and one recessive allele (O).

1. Fill in the following chart with the missing information.

Blood Type (Phenotype)	Possible Genotype(s)	Can donate blood to:	Can receive blood from:
0	00	AO, AA, AB BO, BB, CO ("universal donor")	00
AB	AB	AB	AO, BO, AB AA, B, B, OO AA, B, B, OO universal recipient")
A	AA, AO	AA, AO, AB	00, AO, AA
В	BB, BO	BB , AB , BO .	BB, BO, 200

2.	Write the genotype for each person, based on t	he given description.					
Same	Homozygous for Type B Blood BB (Heterozygous for Type A Blood AO)						
	Type O Blood OO Type A Blood and had a parent with Type O Blood AO						
	Type AB Blood AB	Blood can be given to any individual					
fferent	Heterozygous for Type B Blood BO Homozygous for Type A Blood AA						
litteren	Can only receive blood from a Type O donor OO						
			B	0			
3.	A father is heterozygous for his type B blood (BO) and the mother has						
	type O blood. a. What are the possible blood types of the	e babies born from this	BO	00			
	couple? BO, OO	0	80	00			

4. A father has type AB blood and the mother has type O blood.



a. What percentage of their offspring would you expect to have...

5. A father is heterozygous for his type A blood and a mother is heterozygous for his his heterozygous for his heterozygous for his his heterozygous for his his heterozygous for his his his his his his his his hi	r her type B bloo	d.						
Type A Blood 25 % Type B Blood 25 %	AB	Bo						
Type AB Blood 25 %	AO	00						
6. Mrs. Weasley has Type A blood but she is not sure if she is homozygous or	Δ							
heterozygous. Mr. Weasley is completely unsure of his blood type. Their children have the following blood types: Ron has Type O blood, Fred & George have type A blood, Ginny has type B blood and Percy has type AB	AB	BC						
a. What is Mrs. Weasley's genotype?	AO	00						
b. What is Mr. Weasley's genotype? BO								
another. DNA fingerprinting did not exist at the blood types of the family in order to determine mother had type A blood, the father had type O blood. Use the punnett square to defend yo question.	7. In 1968, a couple accused a hospital of switching their baby with another. DNA fingerprinting did not exist at this time so the hospital traced the blood types of the family in order to determine if a mistake was made. The mother had type A blood, the father had type AB blood, and the baby had type O blood. Use the punnett square to defend your answer to the following question. a. Did the hospital make a mistake and switch the baby?							
8. On a recent episode of CSI, multiple people came forward claiming to be the parents of the victim. For the first set of parents, the man has type AB blood, the woman has type O blood and yet the victim has type B blood. Use the punnett square in order to determine if these people could possibly be the parents of the victim. a. Could these be the parents of the victim?	A AO AO	B B0 30						
b. In the chart below, circle the other possible options for the parents of the victim. Bob Gina Ted Susan Rob Kelly Tricia James Bob and ABBAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	Gina Type Susan Type Kelly Type	O and Type O AB and Type AB A and Type A A and Type B						