Name_____ _____ Date_____ _____

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^AI^B	O, AB	A,B,AB and O (universal receiver)
A	I^AI^A or I^Ai	AB, A	O,A
B	I^BI^B or I^Bi	AB,B	O,B

9. 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 _____

e. Type "AB _____

f. Blood can be donated to anybody _____

g. Can only get blood from a type "O" donor _____

10. Pretend that Kanye West is homozygous for the type B allele, and Kim Kardashian is type "O." **What are all the possible blood types of baby North? Show your work by drawing a punnett square to the right.**

11. 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. **List the blood types below. Show your work by drawing a punnett square to the right.**

12. Mrs. Clink is type "A" and Mr. Clink is type "O." They have three children named Matthew, Mark, and Luke. Mark is type "O," and Matthew is type "A". **Show your work by drawing a punnett square to the right.**

a. Mr. Clink must have the genotype _____

b. Mrs. Clink must have the genotype _____ because _____ has blood type _____

Luke is type "AB." Based on this information:

c. Luke cannot be the child of these parents because _____

13. 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."

a. Mother's genotype: _____

b. Father's genotype: _____

c. Baby's genotype: _____ or _____

d. Draw a punnett square showing all possible genotypes for children produced by this couple.

e. Was the baby switched?