

Name _____ Date _____ Period _____

Genetics Practice Problems #5 - ABO Multiple Allele Worksheet 1

Directions: Given the alleles, genotypes and phenotypes for human blood typing ABO, solve the following multiple allele problems. Recall that A and B alleles are co-dominant and O is recessive. $A = B > O$. When figuring out problems don't forget that there are two ways to observe the Blood Type A and Blood Type B phenotypes

| Phenotypes | Genotypes |
|------------|-----------------------|
| A | $I^A I^A$, $I^A i^O$ |
| B | $I^B I^B$, $I^B i^O$ |
| AB | $I^A I^B$ |
| O | $i^O i^O$ |

1. What is the expected genotypic ratio among children born to a mother having the genotype $I^A i^O$ and a father with the phenotype AB?
2. One parent has the blood type A and the other blood type B. What are the genotypes of the parents if they produce children with only blood type AB?
3. One parent has the blood type A and the other blood type B. What are the genotypes of the parents if 1/2 the offspring are AB and the other 1/2 A?
4. One parent has the blood type A and the other blood type B. What are the genotypes of the parents if the offspring produce the following blood types...1/4 AB, 1/4 A, 1/4 B, and 1/4 O?