

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?