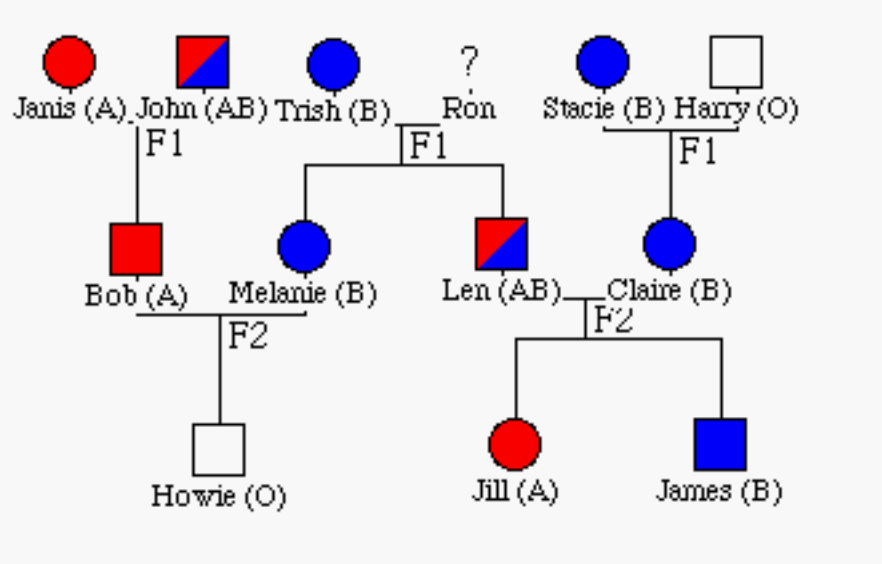
NAME_____ **DATE**_____

Blood Type Activity: Understanding genotype to phenotype and phenotype to genotype and multiple alleles (Blood Type).

Open the GenScope™ File: Blood Type.gs

When this file is opened, a pedigree of three families appears. There are four blood types, A, B, AB, and O. A and B are co dominant to each other and both are dominant to O. Genotypically A type could be AA or AO, B type could be BB or BO, AB type is only AB and O type is only OO

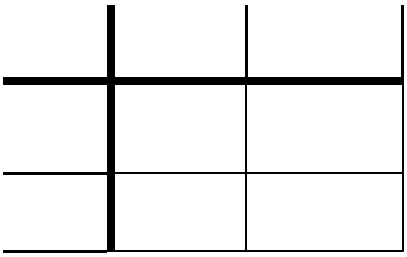


1. **Use the Chromosome Tool to identify the genotypes of the parents in the pedigree above.**

   - **Janis is Type A and genotype** _____
   - **John is Type AB and genotype** _____
   - **Trish is Type B and genotype** _____
   - **Stacie is Type B and genotype** _____
   - **Harry is Type O and genotype** _____

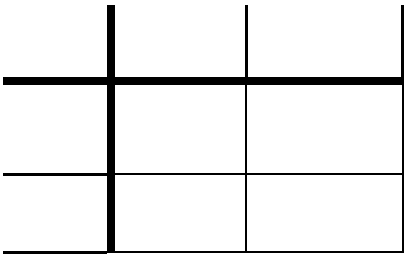
2. Trish is Type B and her son, Len, is type AB. What do you think Ron's blood type is?.

How do you know? Use a Punnett Square to illustrate

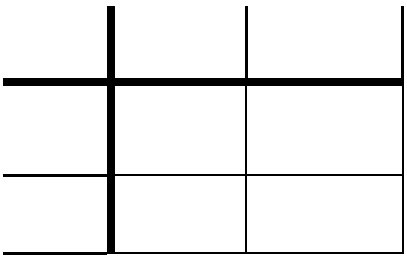


3. Is it possible for Janis and John to have a child who is type O?

How can you explain this? Use a Punnett Square to illustrate.



4. Is it possible for Stacie and Harry to have a child who is type O? Use a Punnett Square to illustrate.



5. Use the Chromosome Tool to identify the genotypes of the offspring from the pedigree above.

- **Bob is Type A and genotype _____**
- **Melanie is Type B and genotype _____**
- **Len is Type AB and genotype _____**
- **Claire is Type B and genotype _____**

6. Len and Claire and Melanie and Bob were in the same hospital at the same time when they had their respective babies. Len and Claire had twins, a boy, James, and a girl, Jill. Melanie and Bob had a boy, Howie. After being home for a few days, Claire was convinced that she had the wrong boy. There must have been a mix-up at the hospital. After all, her kids were twins, and even though they were fraternal twins, you would think that they would look a lot more alike than they do-one is blond and the other is brown-haired. At their insistence, blood types were taken on both their family and Melanie and Bob and their son.

Use the Chromosome Tool to identify the genotypes of the following people:

- **James is Type B and genotype _____**
- **Howie is Type O and genotype _____**
- **Jill is Type A and genotype _____**

Was a switch made at the hospital?

How do you know? Use a Punnett Square to illustrate.