

Blood Type Problems

List all the possible genotypes for each of the 4 blood types:

Type O: ii

Type A: $I^A I^A$ or $I^A i$

Type B: $I^B I^B$ or $I^B i$

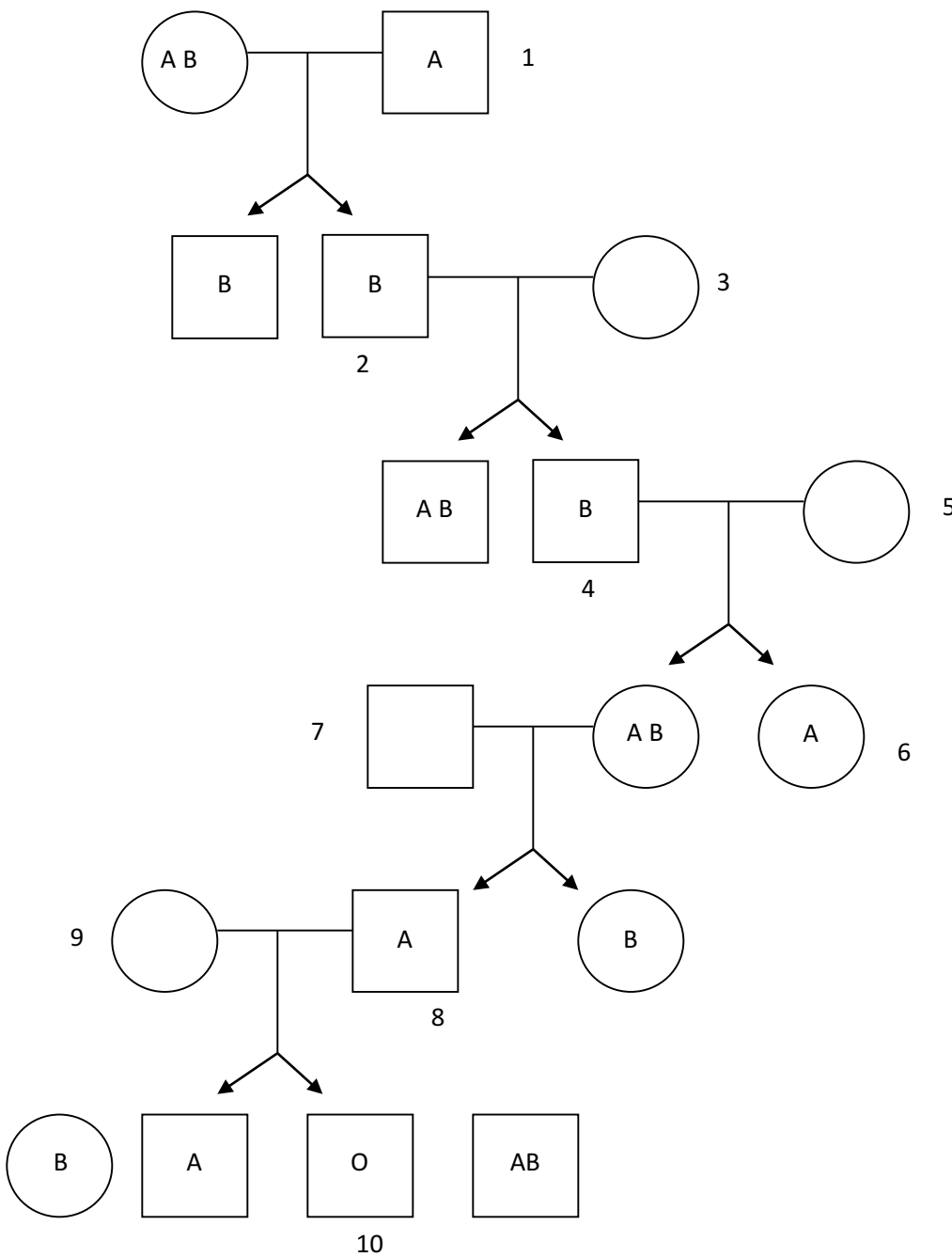
Type AB: $I^A I^B$

SHOW YOUR WORK!

1. A man with AB blood is married to a woman with AB blood. What are the expected genotypic and phenotypic ratios for their children?
2. A man who is homozygous for type B blood is married to a woman with type O blood. What are the expected genotypic and phenotypic ratios for their children?
3. A woman who is heterozygous for type A blood is married to a heterozygous type B person. What are the expected genotypic and phenotypic ratios for their children?
4. A woman with type A blood is claiming that a man with type AB blood is the father of her child, (the child is type AB.) Could this man be the father? Show all of the possible crosses.
5. A man with type AB blood is married to a woman with type O blood. They have two natural children, and one adopted child. The children's blood types are: A, B, and O. Which child was adopted?
6. A person has type B blood. What are ALL the possible blood types of his parents. Show the crosses to prove your answer.
7. Why is a person with type O blood called a "universal donor"?
8. Why is a person with type AB blood called a "universal acceptor"?

Genetics Problems: ABO blood groups

Below is a pedigree of ABO blood groups for several generations of human. Circles represent females and squares represent males. Horizontal lines directly connecting two people represent marriages, and children are connected to their parents by a vertical line down from the marriage line. Give the possible genotypes for each individual marked with a number on the appropriate line.



Possible Genotypes	
1.	_____
2.	_____
3.	_____
4.	_____
5.	_____
6.	_____
7.	_____
8.	_____
9.	_____
10.	_____