Polygenic Inheritance: Blood Types

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1) Both the father and mother have type O blood.

\_\_\_\_\_\_\_\_\_\_ x \_\_\_\_\_\_\_\_\_

Phenotypic Ratio:

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2) The father is type A homozygous, the mother is type B homozygous.

\_\_\_\_\_\_\_\_\_\_ x \_\_\_\_\_\_\_\_\_

Phenotypic Ratio:

3) The father has type O blood, the mother has type AB blood.

\_\_\_\_\_\_\_\_\_\_ x \_\_\_\_\_\_\_\_\_

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Phenotypic Ratio:

4) Both the father and mother have type AB blood.

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\_\_\_\_\_\_\_\_\_\_ x \_\_\_\_\_\_\_\_\_

Phenotypic Ratio:

6) Alice has type A blood and her husband Mark has type B blood. Their first child, Amanda, has type O blood. Their second child, Michael, has type AB blood.

What is Alice’s genotype? \_\_\_\_\_\_\_\_\_\_\_\_\_

What is Mark’s genotype? \_\_\_\_\_\_\_\_\_\_\_\_\_

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Show how you found the answer by completing the Punnett square(s) below:

7) Candace has type B blood. Her husband Dan has type AB blood. Is it possible for Candace and Dan to have a child that has O blood? \_\_\_\_\_\_\_\_\_\_\_ Explain why or why not (use a Punnett square to help).

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8) Ralph has type B blood and his wife Rachel has type A blood. They are very shocked to hear that their baby has type O blood, and think that a switch might have been made at the hospital. Can this baby be theirs? \_\_\_\_\_\_\_\_\_\_\_\_\_ Explain why or why not (use a Punnett square to help).