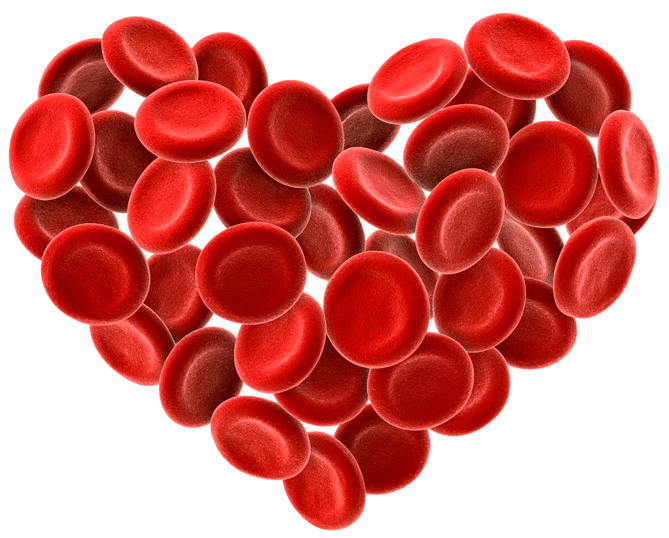
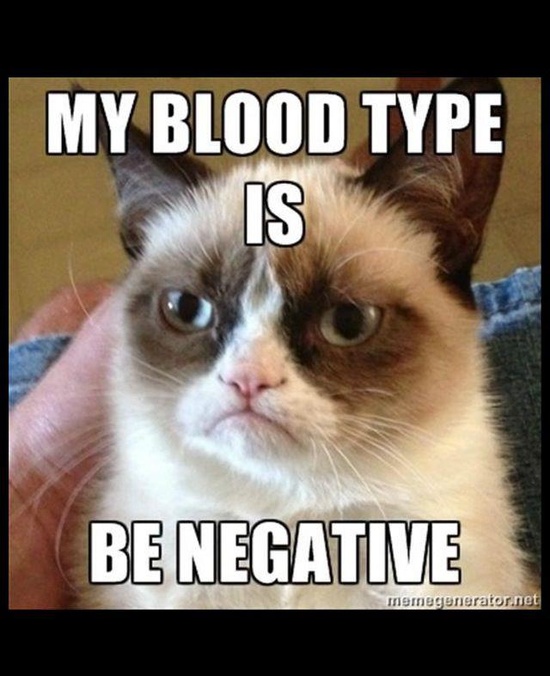
**Multiple Alleles Notes**

**Multiple Alleles -**

Antibodies –

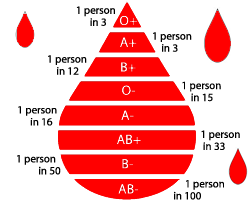
Antigens -

|  |  |  |  |
| --- | --- | --- | --- |
| **Blood Type A** | **Blood Type B** | **Blood Type AB** | **Blood Type O** |
| Picture  Antigen –  Antibodies –  Possible Genotypes - | Picture  Antigen –  Antibodies -  Possible Genotypes - | Picture  Antigen –  Antibodies -  Possible Genotypes - | Picture  Antigen –  Antibodies -  Possible Genotypes - |

**Which of the following blood type(s) is DOMINANT –**

**Which of the following blood type(s) is RECESSIVE -**

**Which of the following blood type(s) is CODOMINANT –**

**Rh Factor**

**+ :**

**- :**

**Multiple Alleles: Blood type is a trait that is determined by 3 different modes of inheritance: codominance, complete dominance and multiple alleles. The four possible phenotypes are of blood types A, AB, B and O. A and B alleles are codominant, while the O allele is recessive to both.**

1. If A is codominant with B, what offspring would be possible from a cross between two AB blood individuals? (Include the probability with which they will occur)

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| --- | --- |
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|  |  |

% Possible Genotypes:

% Possible Phenotypes:

\_\_\_\_ A \_\_\_\_ B

\_\_\_\_ AB \_\_\_\_ O

1. A mother is Homozygous for type A and the father is Homozygous for type B. Which parent, if any can give their blood to their child in case

% Possible Genotypes:

% Possible Phenotypes:

\_\_\_\_ A \_\_\_\_ B

\_\_\_\_ AB \_\_\_\_ O

|  |  |
| --- | --- |
|  |  |
|  |  |

1. Both parents have blood type A, but 3/4 of their children have blood type A and 1/4 have blood type O. What are the complete genotypes of the parents? (Hint: Fill in the Punnett Square in reverse.)

% Possible Genotypes:

% Possible Phenotypes:

\_\_\_\_ A \_\_\_\_ B

\_\_\_\_ AB \_\_\_\_ O

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1. Challenge! Show a cross between one parent who is homozygous for Type A- blood and another who is heterozygous for B+. (NOTE: blood type and the Rh factor are 2 different genes)

**Possible Genotypes**

\_\_\_\_ A+ \_\_\_\_ AB+

\_\_\_\_ A – \_\_\_\_ AB -

\_\_\_\_ B+ \_\_\_\_ O+

\_\_\_\_ B- \_\_\_\_ O-