|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name: | **[insert name]** | Period: | **[insert Period]** | Date: | **[insert date]** |

Allergic Response Data

# Background

Unsure of what was causing Maria’s symptoms, the doctors ran tests on her blood. One thing they were looking for was a sign of an allergic response.

Allergies are caused by an abnormal reaction by the immune system to a foreign substance. Usually this reaction is caused due to a harmful substance. Allergies, in one sense, are like an overreaction.

To see if Maria’s symptoms were caused by an allergic response, a complete blood count was taken. For this test, a sample of Maria’s blood is taken and put through a machine to count the number of red and white blood cells. The machine can also count the different types of white blood cells.

##

## Data Analysis

Below are portions of Maria’s complete blood count (CBC) results as well as CBC information for a healthy patient and a patient after an allergic reaction. View these results and answer the questions in the table below. Note that eosinophils are a type of white blood cell that are used as a common indicator of an allergic response.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Maria** | **Healthy Female Patient** | **Female Patient with Allergy** |
| ***Red blood cell count*** | 5.1 trillion cells/L | 5 trillion cells/L | 5.3 trillion cells/L |
| ***Platelet count*** | 199 billion/L | 205 billion/L | 201 billion/L |
| ***White blood cell count*** | 5.6 billion cells/L | 5.8 billion cells/L | 9.2 billion cells/L |
| ***Eosinophil count*** | 325 cells/mL | 354 cells/mL | 3,147 cells/mL |

|  |  |
| --- | --- |
| **Question/ Prompt** | **Your Response** |
| 1. What differences do you notice between the healthy sample and the allergic sample? Are those differences significant?
 |  |
| 1. Looking at Maria’s sample data, do you think she had an allergic reaction? Why or why not?
 |  |