**Gait Analysis Activity Assessment**

**Answer one of the following questions in complete sentences.** (Circle the # of the one you choose.)

1. What is data analysis?
2. How can a predictive model be developed and used to interpret new data?
3. What are some limitations on the reliability of a model constructed by analyzing data?

**Complete the following performance assessment.**

The following Gait Signature Metric (GSM) values were calculated for a group of human subjects.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Adult 1** | **Adult 2** | **Adult 3** | **Child 1** | **Child 2** | **Child 3** |
| **GSM 1** | **3.35** | **4.46** | **1.24** | **3.76** | **5.97** | **2.08** |
| **GSM 2** | **1.78** | **1.63** | **1.43** | **4.39** | **2.89** | **2.16** |

1. Which GSM value is likely to yield a more reliable model for predicting whether a new subject is an adult or child? Justify your answer.
2. Analyze the data in the table to construct a model for predicting whether a new subject is an adult or a child. Show your work and justify your methodology.

The following Gait Signature Metric (GM) values were calculated for two new subjects:

|  |  |  |
| --- | --- | --- |
|  | **New Subject 1** | **New Subject 2** |
| **GSM 1** | **2.39** | **1.83** |
| **GSM 2** | **1.49** | **2.10** |

1. Use your model (from question 5) to predict whether each new subject is an adult or a child. Explain your reasoning, including an assessment of the reliability of your prediction.