Name

Hour

Teacher

Radioactive Decay Lab Report

## Introduction

In paragraph form discuss the following:

* Discuss any important background information
* Discuss the objectives of this lab

## Materials and Methods

* Provide a bulleted list of all the materials needed for the lab

In paragraph form discuss the following:

* discuss the number of trials conducted in the experiment
* give a numbered step-by-step description of the activities to be done in order to gather the information needed to achieve the purpose of the experimentation. (This needs to be detailed and precise so another person can repeat the experiment exactly).
* Include any equations you used in your calculations.
* All units need to be in METRIC.

## Results

Table 1: Class data table illustrating number of un-decayed skittles (isotopes) after each run/ half-life.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Run | Group 1 | Group 2 | Group 3 | Group 4 | Group 5 | Group 6 | Class Total | Class Average | Probable value |
| 0 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1 |  |  |  |  |  |  |  |  | 50 |
| 2 |  |  |  |  |  |  |  |  | 25 |
| 3 |  |  |  |  |  |  |  |  | 12.5 |
| 4 |  |  |  |  |  |  |  |  | 6.25 |
| 5 |  |  |  |  |  |  |  |  | 3.125 |
| 6 |  |  |  |  |  |  |  |  | 1.56 |
| 7 |  |  |  |  |  |  |  |  | 0.78 |
| 8 |  |  |  |  |  |  |  |  | 0.39 |
| 9 |  |  |  |  |  |  |  |  | 0.19 |
| 10 |  |  |  |  |  |  |  |  | 0.098 |

Figure 1: Probable values, class values and group values

## Discussion

In paragraph form discuss the following:

* Why didn’t each group get the same results?
* What do the probable values represent?
* Is there anything improbably about the probable values, whether as applied to M&M’s or to atoms?
* Which line, the class average or your group’s results, most closely resembles those of the probable values?
* Do the earlier or later average trials of your class data most resemble the probable values? Why?
* For how many half-lives do real or simulated atoms behave like probabilistic values? What are the implications for radiocarbon-dating and uranium-dating?
* Is there any way to predict when a specific piece of candy will land marked side up or “decayed?” If you could follow the fate of an individual atom in a sample of radioactive material, could you predict when it would decay? Explain.