**Genetics Scenario – Twin Study**

*Honors Biology*

Robert and Peter are identical twins. Robert and Peter live out their lives and no issues arise in their development.

Susan and Mary are a second set of identical twins. Susan and Mary also live out their lives with no known issues arising in development.

Robert decides to marry Susan and Peter marries Mary.

Each couple is expecting their first child. Mary asked her doctor (which will be you):

***“Is there a chance that the children will be identical to each other?”***

How would you answer Mary’s question? Yes, No, Maybe?

You act as her Doctor (which means you know all about her genetic history) to provide an answer to this question and justify your answer with at least 3 topics we have discussed in Biology that could be used. Each topic must be explained/described in great detail so that Mary can understand it (Mary graduated from high school in 2004, and did not study science in college, so it has been a while since she has had Biology). You can use pictures/diagrams.

**Write your answer as a letter to Mary.**

**Step 1**: Choose an overall stance/answer to her question: Yes No Maybe (*Circle one*)

**Step 2**: Choose 3 Topics (be specific) we have discussed in Biology class that can back up or justify your overall stance/answer: (Check with teacher before proceeding to next step)

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Step 3**: Set up you letter: It is a hand written letter, so it needs to look like one…

* Intro Paragraph:
  + Greeting
  + Tell Mary your overall stance/answer to her question
  + List (briefly) your 3 topics you will discuss in your letter
* 1st -3rd Body Paragraphs:
  + Discuss in detail your first topic and how it supports your overall stance
    - Defining any key terms as needed
    - Drawing figures as needed
* Closing Paragraph
  + Summary of topics and how they support your stance
  + Personal Goodbye (you’re her Dr. and you know stuff about her and her life)
  + Closing and Signature
* Appendix (Optional)
  + An additional figures, diagrams, terms, etc. that you make reference to within your letter.