Pre-Lab Questions:

1. In your own words, what do you think bioinformatics is?

2. Again, in your own words, what do you think these terms mean?

   a) *In-Vitro*

   b) *In-Silica*

   c) *In-Vivo*

During-Lab Observations:

1. What is 35S, and how is it used in the genetic engineering of crop plants?

2. Using BLAST and the primer sets found below, circle the primer set that targets 35S, and calculate the expected size of the PCR amplicon for both 35S and Tubulin amplicons.

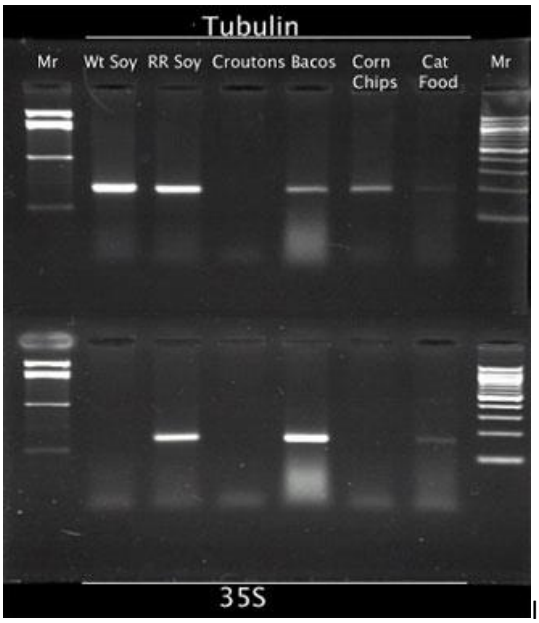
The following primer sets were used in the experiment:	
5'-CCGACAGTGGTCCCAAAGATGGAC-3'	(Forward Primer)
5'-ATATAGAGGAAGGGTCTTGCGAAGG-3'	(Reverse Primer)
5'-GGGATCCACTTCATGCTTTCGTCC-3'	(Forward Primer)
5'-GGGAACCACATCACCACGGTACAT-3'	(Reverse Primer)

   a) Size of 35S amplicon: _____
   b) Size of T amplicon: _____

3. Doing a Google search with the 35S primer sequences reveals which genes can be expressed in plants. Name two of these genes and the traits they code for.

Post-Lab Questions:

Base your answers on the following gel results:



1. In this gel there are two sets of gel data, labeled "Tubulin" and "35S." What do these different sets of data tell us about each sample that was tested?

    a) Tubulin:

    b) 35S:

2. For which sample (s) are the results inconclusive? Explain.

3. Which food products contain genetically modified plant material? Explain.

4. The Wt (wild type) soy and RR (Round-Up Ready) soy are controls. What does this mean, and how is this data important to the experiment?