What's the frequency Roy G. Biv?

Student worksheet

Name_____________________________ Date__________________ Per./Mod______

1. Compare the wavelengths and frequencies of the three waves. Write about any patterns you notice in their relationship.

__________________________________________________
__________________________________________________
__________________________________________________

2. Which color has the shortest wavelength? ____________
   Which color has the longest wavelength? ____________

3. Which color has the highest frequency? ____________
   Which color has the lowest frequency? ____________

4. What is the relationship of the red wavelength to the green?
   ______________________________________
   Red to the violet? _________________________

5. What is the relationship of the red frequency to the green?
   ______________________________________
   Red to the violet? _________________________

6. From your answers to the questions above, name the relationship between wavelength and frequency in wave that travel at the same velocity like the waves measured in this lab.
   ______________________________________
   ______________________________________
7. Remember that velocity = distance / time. What was the velocity of the waves in this lab? ____________________
   *NOTE: the actual velocity of light c = 2.99 x 108 meters per second, but for our purposes in this lab, it will appear only as fast as the Time Keeper is pulling the adding machine tape.

8. Multiply the wavelength of the red wave by its frequency. Do this for the blue and green waves also and write the answers below.
   red ______________
   green ____________
   violet ____________

9. What do you notice about the results?
   ____________________________________________________________________________

10. Write an new equation for the velocity of waves in terms of wavelength and frequency instead of distance and time.
   ____________________________________________________________________________