Wave Interference

Website:

<https://goo.gl/f5XDV7>

Follow the directions listed here. Be sure to answer the questions as you go along. Unless indicated otherwise, answer in complete sentences. ***One word answers and numerical answers without work shown will only be given ½ credit!!***

1. Change the end to a loose end.
2. Change the tension to low tension.
3. Check the pulse option.
4. Send a pulse down the medium and observe what happens to the wave as it travels down the line.
   1. Is the wave reflected off the end or inverted and then reflected? (Does it hit and bounce or flip and bounce?) (5 pts.)
5. Change the end to a fixed end. Leave the tension and everything else the same. Send another pulse down the medium and observe what happens to the wave as it travels down the line.
   1. Is the wave reflected off the end or inverted and then reflected? (Does it hit and bounce or flip and bounce?) (5 pts.)
6. Hit the reset button.
7. Click pause.
8. Check the oscillate option.
9. Change dampening to none and tension to low.
10. Select the slow motion option.
11. Click play and observe what happens to the wave as it travels down the medium and begins to bounce back.
    1. What is causing the wave to distort when it hits and bounces back? (5 pts.)
    2. Is this constructive or destructive interference? Is it both? How do you tell? (5 pts.)
12. Click pause.
13. Change the end to the loose end and click play.
14. Observe how the behavior of the wave changes.
    1. Describe what changing to a loose end does to the behavior of the wave. (5 pts.)
    2. How do you think the wave pattern would change if there were no end? (5 pts.)
15. Select the no end option.
    1. Draw the wave pattern once it settles down. (You may want to click pause to get a good view of the wave.) (10 pts.)
    2. Label the amplitude of your wave. (2 pts.)
    3. Label the wavelength of your wave. (2 pts.)
    4. Using the information given in your settings, calculate the period of your wave. Be sure to show your work. (5 pts.)
    5. Is this a transverse or longitudinal wave? (2 pts.)
    6. How do you know what type of wave it is? (2 pts.)
    7. Click on the ruler option and measure the wavelength. Record it here. \_\_\_\_\_\_ (2 pts.)
    8. Use your measurement and the info given on the screen to calculate the velocity of this wave. Be sure to show your work. (5 pts.)

Conclusion:

1. Write 2-3 sentences explaining how interference can affect a wave pattern. Base your statement on what you have observed in this lab. (40 pts.)