Name: Waves Assignment

1. A sonar signal of frequency 2.50x106Hz has a wavelength of 1.85mm in water. What is the speed of the signal in water? (2 marks)
2. The school bell rings and Reid Enright is .535km away. He heard the bell 2.60s after it rang. What is the speed of sound in this situation? (2 marks)
3. 18 pulses are created every 0.20s in a tank of water. What is the speed of the wave if the wavelength of the surface wave is 2.60cm? (2 marks)
4. Draw an example of constructive interference. Draw a diagram of the before, during, and after the waves have passed through each other. (1 mark)
5. Draw an example of destructive interference. Draw a diagram of the before, during, and after the waves have passed through each other. (1 mark)
6. If an incident wave has a positive displacement, what kind of displacement does a reflected wave have if it does not have a fixed end? (1 mark)
7. What is the frequency heard by a person driving 35m/s toward a school bell (800.Hz) if the speed of sound is 340.6m/s (4 marks)
8. Two identical cars are driving toward one another and sounding their horns. You’re the driver of one of the cars. Both cars have a horn with a frequency of 421Hz. You are travelling at 25.6m/s and the other car is travelling at 23.5m/s. The speed of sound is 343m/s, what frequency do you hear from the other car?