3.6.6.2: Adding Two Wave Pulses (Superposition)

In this simulation you see two wave pulses (red and green) and then the sum of the two pulses (blue). You can choose to have the two pulses both have an initial positive amplitude (Animation 1) or have the second pulse start with a negative pulse (Animation 2). When two waves are linear (the forces involved are Hooke's law forces) they can be added point by point at each instance of time. This is called ***superposition*** and occurs for any shape of linear wave.

Simulation Questions:

1. Step through Animation 1 until both pulses are on top of each other (a single blue pulse). What is the amplitude of the combination compared to the amplitude of the two individual pulses?
2. Now step through Animation 2 until both pulses are on top of each other (a single blue pulse). What is the amplitude of the combination compared to the amplitude of the two individual pulses? Why is the combination amplitude zero when the pulses collide?