PHYSICS NAME _____
DEMONSTRATION LAB: WAVES ON SPRINGS DATE _____PERIOD ___

As you observe the demonstrations of wave behavior on springs, circle the right answers or complete the statements in the items below.

1. WAVE SPEED

(a) The speed of the wave after reflection is (less than) (equal to) (greater than) the speed prior to reflection.

(b) When the tension increases, the speed (increases) (decreases).

2. WAVE REFLECTION

(a) A wave reflects (right-side-up) (upside-down) from a fixed end.

(b) A wave reflects (right-side-up) (upside-down) from a free end.

3. CHANGE OF MEDIUM

(a) When a wave travels from one spring into another, what two thins happen at the boundary?

1. 2.

(b) A wave reflects (right-side-up) (upside down) when going from a light spring into a heavy spring.

(c) A wave reflects (right-side-up) (upside down) when going from a heavy spring into a light spring.

(d) A wave is transmitted (right-side-up) (upside down) when going from a light spring into a heavy spring.

(e) A wave is transmitted (right-side-up) (upside down) when going from a heavy spring into a light spring.

4. SUPERPOSITION

(a) Pulses which travel toward each other on the same side of the spring get (larger) (smaller) while they are together in the process of passing.

(b) Pulses which travel toward each other on opposite sides of the spring get (larger) (smaller) while they are together in the process of passing.

5. COMPLETE THE FOLLOWING PROBLEM. Part (a) shows a pulse moving along a spring which has sections of different densities. Parts (b) and (c) show the same spring at equal intervals of time later. Draw vertical lines on drawings (b) and (c) to locate the boundaries that must be present between the sections to produce the locations and directions of the pulses shown. Identify the relative densities of the sections, i.e., which section is heaviest, which lightest, etc.