**Worksheet 24 standing sound waves Name:**

Relevant textbook sections covered: 21.3, 21.4

1. **Qualitative** – adding sine curves moving in opposite directions.



2. **Quantitative** – adding sine curves moving in opposite directions.

Two waves traveling in opposite directions produce a standing wave. The individual wave functions are (distances in cm):

 D1 = (4cm)sin(3x - 2t) D2 = (4cm)sin(3x + 2t)

1. What is the amplitude of a particle located at an antinode?
2. Find the (x-)positions of first two nodes and antinodes.
3. What is the distance between two nodes?
4. What is the distance between two antinodes?
5. What is the distance between a node and an antinode?
6. What is the amplitude of a point located at *x* = 0.12 cm?