

Name \_\_\_\_\_ Instructor name \_\_\_\_\_

**You must show and explain all work neat and organized to receive credit. Please show each step for calculations. YOU MUST TURN IN THIS SHEET to have your assignment graded.**

1. (a) What is an antinode? (b) What is a node? (4 pts)

2. A cord  $13.70\text{ m}$  long has a mass of  $2.680\text{ grams}$ . (a) What is the linear mass density of the cord in  $\text{kg/m}$ ? (b) For the same cord, if the tension were provided by a  $1.650\text{ kg}$  mass, how long would the cord have to be to vibrate with three antinodes? Assume  $f = 135.0\text{ Hz}$ . (12 pts)

3. When standing waves are produced in this experiment, does increasing the tension produce a larger or smaller number of antinodes along the string? Support the answer using the relevant equation(s). (4 pts)