Quiz 1. Directions: Answer all questions to the best of your ability. If you include a diagram with your explanation, please be sure to label relevant parts.

1. What is the main role of cholesterol in the plasma membrane in animal cells?

2. (Old exam question) A marathon runner suffers from hyponatremia after drinking too much water. Signs of hyponatremia include severe headaches, nausea, and confusion. What is one possible explanation for these symptoms?

3. You are a graduate student studying mutations in the sodium potassium pump by measuring the voltage across the plasma membrane. You notice in one cell that the inside of the cell is positive with respect to the outside of the cell. What kind of mutation could induce this phenotype?

4. Fill in the blanks. __________ fibers grow and shrink by adding subunits to the plus (+) end only. __________ on the other hand, grow by adding subunits to the plus (+) end and shrink by removing subunits at the minus (-) end.