Common Ancestry Assessment

1. Species A, B, and C all make actin, a protein that helps muscles contract. The amino acid sequences of actin protein are 90% identical between A and B, but only 70% identical between A and C.

   a. Based on the evidence above, choose the statement that is most likely to be correct:
      - A shares a more recent common ancestor with C than with B
      - A shares a more recent common ancestor with B than with C

   b. Choose the tree diagram that shows the correct relationship:
      - Tree 1
      - Tree 2
      - Tree 3

2. Ms. Biology teacher tells the class that broccoli and bananas descended from a common ancestor. One student says, “No way! Broccoli and bananas are totally different.”

   What evidence can Ms. Biology teacher use to support her claim? (Choose all that apply.)
      - When ripe, bananas are yellow and broccoli is green.
      - Banana and broccoli plants both have chloroplasts and cell walls.
      - Bananas and broccoli both have genes that code for the protein cellulose synthase.
      - Bananas and broccoli are both food.
      - Banana and broccoli plants both develop from embryos that grow from seeds.
      - Banana and broccoli plants share anatomy, including leaves, stems, roots, and flowers.
      - Banana and broccoli plants are both represented in the fossil record.