Consider the cube given below where the edge length is designated by the letter, a.

1. \( f \) is called a face-diagonal of a cube. What is the length of the hypotenuse, \( f \), of the right angle triangle whose sides are each designated by the letter, a?
   
   **Setup:**

   ![Diagram of a face-diagonal](image)

   Answer: 

2. \( b \) is called a body-diagonal of a cube. What is the length of the hypotenuse, \( b \), of a right angle triangle whose one side is designated by the letter, a, and the other side is equal to \( \sqrt{2} \) a?
   
   **Setup:**

   ![Diagram of a body-diagonal](image)

   Answer: 
