Homework 3

1. Determine which angles between two vectors are acute, right, or obtuse:

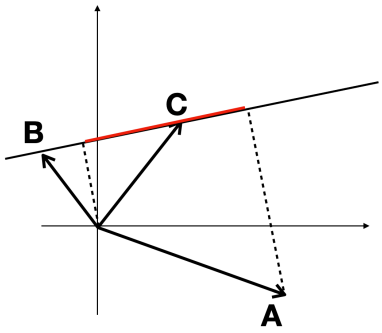
   a) v1 = (1, 1, 1), v2 = (1, -2, 1)

   b) v1 = (3, -1, 0), v2 = (1, 1, 5)

   c) v1 = (-2, 1, 3), v2 = (2, 0, 1)

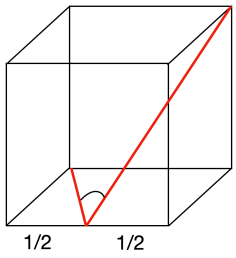
2. Find the the Euclidean length of the projection of vector **A** to the line that comes through the points **B** and **C** as shown in the graph.

   A = [1, -1, 2], B = [0, 1, 4], C = [3, 1, 0]



3. We have got a cube.

   Find the angle between two red lines as shown in the graph.



4. Find the distance from the point [6, 7, 3] to the line that comes through [1, 0, 1] and [0, -1, 2].

5. **Optional**:

   Find the projection of the point (4, -2, 1) onto the plane that comes through the next three points: A = (1, 1, 0), B = (0, -2, 3), and C = (2, 1, 3).