Part 2: Linear Algebra Review

A. Identify whether Matrix A is linearly dependent or independent. Provide necessary formal or mathematical proof for your claims.

$$A = \frac{1}{\sqrt{2}} e^{\theta i} \begin{bmatrix} 1 & -2 & -1 \\ -0.5 & 1 & 0.5 \\ 1 & -2 & -1 \end{bmatrix}$$

B. Identify whether the two vectors A and B are orthogonal using the cosine similarity formula. You must provide the following in your solution:

1. The inner product of A and B;
2. The norm of A;
3. The norm of B; and
4. The angle between A and B represented by θ.

$$A = [13,20], B = [-2,17]$$