1. What is one of the principal limitations of stone beam and column construction? Describe the underlying reasons by considering the forces on the beam and the structural properties of stone. Illustrate with a diagram.

2. A force of magnitude 20 units is represented by the vector $F$ in the diagram below. Use the additional information given in the diagram to compute the magnitude of the component of $F$ in the direction $\theta$.

3. Write a short paragraph that describes Roman concrete and its use.