

Quiz 3. February 16, 2011. Name

1. Explain why the base of the dome of the Hagia Sophia is now an oval rather than a circle. Discuss the aspects of the basic structure of the church that are relevant within the explanation. In particular, why is the longer axis of the oval perpendicular to the nave?

2. Describe the basic structural scheme (along with its components) of a typical Gothic cathedral. (Recall that the word “structural” refers to features that are relevant to insure the stability of the building.) Please use sketches to illustrate.

3. The diagram below shows a simple truss within a wooden roof structure. The load L is 7,000 pounds and the angle α is 25° . Describe the forces acting at the point A . Why is the horizontal tie-beam AB under tension? Compute this tension.

