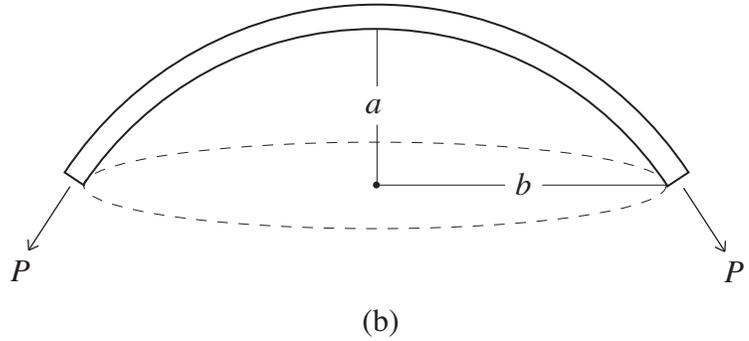
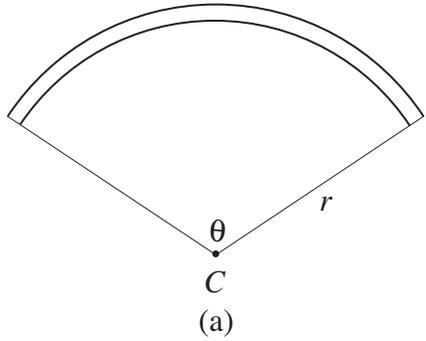


Quiz 4. February 13, 2013. Name

1. Some architectural historians believe that the original dome was 20 feet lower than the current dome. In the context of Figure (b) below, this means that $a = 13$ feet. Assuming that the radius b of the horizontal cross section is $b = 47$ feet (as in the current dome), find the radius r of the sphere and the angle θ , see Figure (a), that determine the inner surface of the original dome.



2. Describe in explicit terms the primary structural aspect of the current dome of the Hagia Sophia that caused the expansion of its base in one direction and brought about its current oval shape.