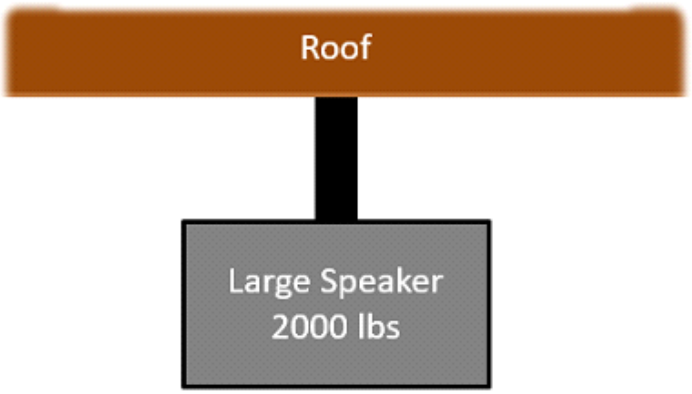
Problem 2

A circular rod will be used to support a 2000lb audio system from a rafter in a theater. If the rod material can safely support stresses up to 30 ksi, what is the minimum diameter needed for the rod?



$$\sigma = \frac{N}{A}$$

$$30{,}000 \frac{lbs}{in^2} = \frac{2000\ lbs}{A}$$

$$A = .0667\ in^2 = \pi r^2$$

$$r = .146 in$$

$$\boxed{d = .291\ in}$$