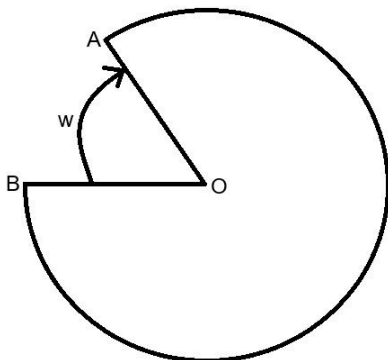
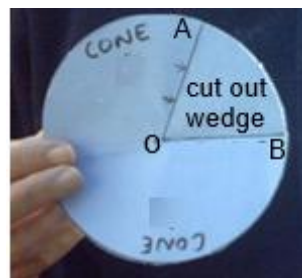


Maximum Volume of a Cone Calculus Problem

Consider the circular net plan as shown in the diagram below:



A wedge is cut out of the circular plan at an angle of W radians.



When the two sides AO and BO are joined together a cone will be formed as shown in the images below:



Prove using calculus, that for a cone formed by joining AO and BO (due to the wedge cut-out) a MAXIMUM volume will occur when the radian angle W is as follows:

$$W (\text{Maximum Volume}) = 2\pi \left(1 - \sqrt{\frac{2}{3}}\right)$$