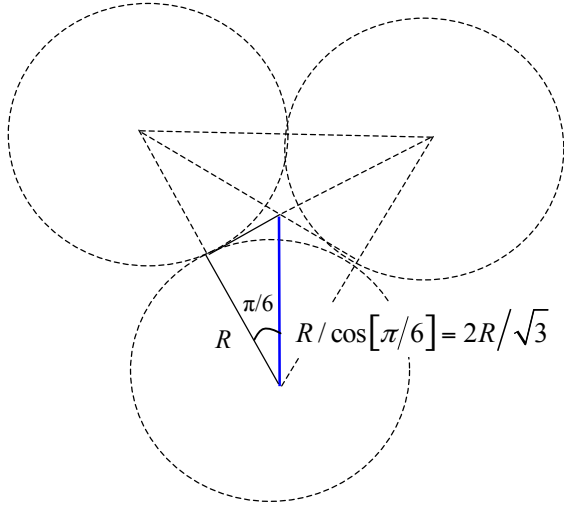


Feynman's Tips on Physics Exercise 1-6
(forces solution notes)

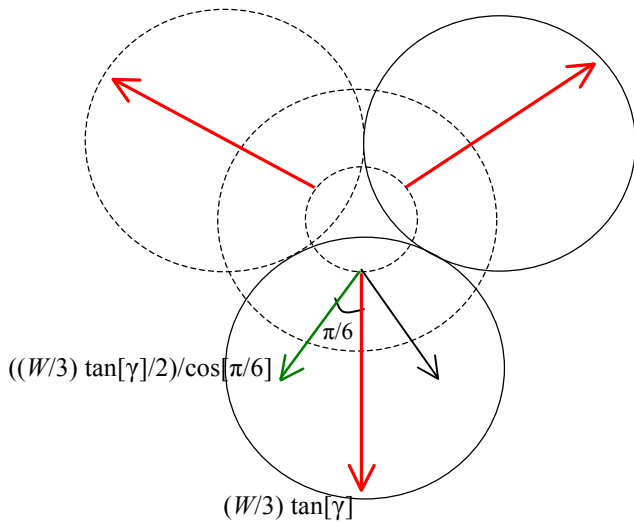
$R = \text{radius of sphere}$ $W = \text{weight of sphere} = 2\sqrt{6}$ ton-wt $T = \text{weld tension}$

I



top views

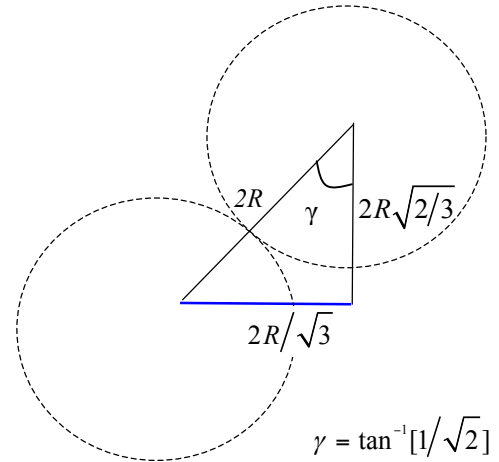
IV



$$\begin{aligned}
 T &= \left(\frac{W}{3} \tan[\gamma] / 2 \right) / \cos[\pi/6] \\
 &= \left(\frac{W}{3} \right) \left(\frac{1}{2\sqrt{2}} \right) / \left(\frac{\sqrt{3}}{2} \right) \\
 &= \left(\frac{W}{3\sqrt{6}} \right) \\
 &= \frac{2}{3} \text{ ton-wt.}
 \end{aligned}$$

Thus, allowing a factor of 3, the welds must withstand 2 ton-wt.

II



side views

III

