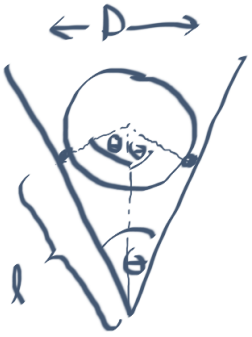
Steel ball in gulley

D = Diameter = 1 cm

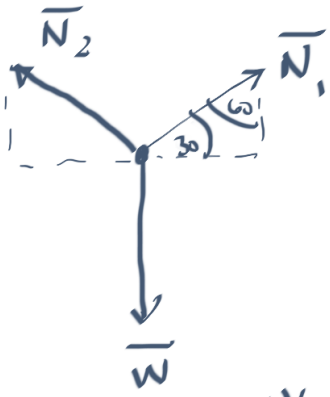


$\theta = 60°$

$$\tan\theta = \frac{l}{D/2} \Rightarrow l = \frac{D}{2}\tan\theta$$

$$l = (6.5\,cm)\sqrt{3}$$

$$\boxed{l = 0.866\,cm}$$



To find the normal forces, we need the vertical components of N_1 & N_2 to balance the weight. N_1 & N_2 have same magnitude.

$$N_{1y} + N_{2y} = mg = \rho V g$$

$$\rho V g = \left(7.9\frac{g}{cc}\right)(0.524\,cc)(9.8\,m/s^2) = 0.0406\,Newtons$$

So $2N_{1y} = 0.0406\,N \Rightarrow N_{1y} = 0.0203\,N$

$$N_{1x} = N_{1y}\sqrt{3} = 0.0703\,N$$

$$\boxed{N = 0.0732\,Newtons}$$