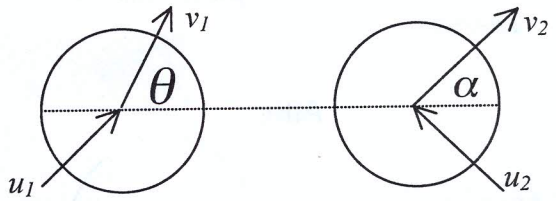
Impulse

Impulse imparted to a particle = change in momentum of a particle = $mv - mu$ (in Ns)

Theoretical questions

Where nothing is known concretely about the velocities of the spheres after collision, it is better to name them $\vec{v}_1 = c\vec{i} + d\vec{j}$ and , etc. calculate $\vec{v}_1$ and $\vec{v}_2$ using PCM etc., and then work out θ and α using $\theta = \tan^{-1}\frac{d}{c}$ etc.



Angle of deflection

The difference in the angle that the incoming velocity of a particular sphere makes with the horizontal and the angle that the outgoing velocity of the same sphere makes with the horizontal.

Perpendicularity

This can be dealt with in a number of ways:

(i) two vectors are perpedicular if and only if $\vec{a} \bullet \vec{b} = 0$

(ii) If $\vec{v}_1$ is horizontal and $\vec{v}_1 \perp \vec{v}_2$, then $\vec{v}_2$ is vertical

(iii) individual geometry

Note: need to update this for higher level to include some notes from Skoool.ie