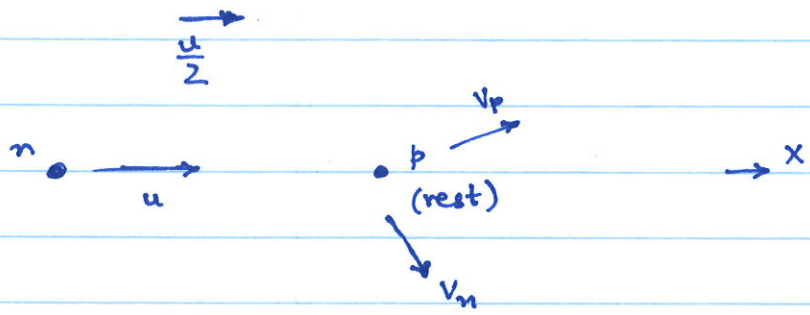
9-51)



$$\vec{V}_p = \left[\left(\frac{u}{2}\right)\cos\theta^* + \left(\frac{u}{2}\right)\right]\hat{i} + \left(\frac{u}{2}\right)\sin\theta^*$$

$$\vec{V}_n = \left[\left(\frac{u}{2}\right)\cos\left(\theta^* - \pi\right) + \frac{u}{2}\right]\hat{i} + \left(\frac{u}{2}\right)\sin\left(\theta^* - \pi\right)$$

' denotes final E.

$$E_p' = \frac{m}{2}V_p^2 = \frac{m}{2}\left(\frac{u}{2}\right)^2\left\{\sin^2\theta^* + 1 + \cos^2\theta^* + 2\cos\theta^*\right\}$$

$$= \frac{mu^2}{4}\left\{1 + \cos\theta^*\right\}$$

If E_p' is flat from $0 \to$ max., then so is $\cos\theta^*$.

Thus, $\dfrac{d\sigma}{d\Omega} = \dfrac{d\sigma}{d(\cos\theta^*)\,d\phi} = \text{constant.}$