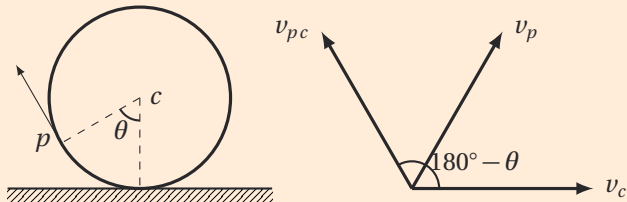speed of a point on circumference

$$\vec{v}_p = \vec{v}_c + \vec{v}_{pc}$$

$$v_p = 2v \sin\frac{\theta}{2}$$