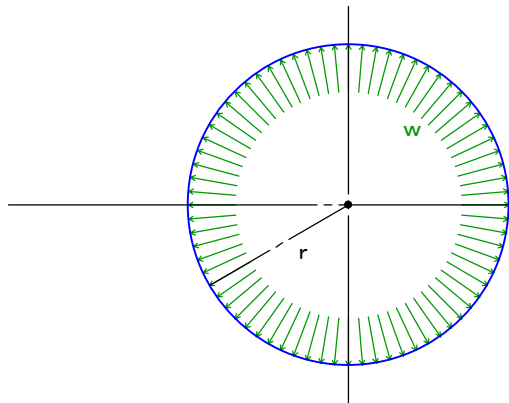


$$\Delta w = w \cdot d\theta \cdot r$$

$$\Delta w_y = \Delta w \cdot \sin \theta = w \cdot r \cdot d\theta \cdot \sin \theta$$

$$T = \int_0^{\pi/2} w \cdot r \cdot \sin \theta \cdot d\theta = w \cdot r \cdot \cos(\pi/2) = -w \cdot r$$