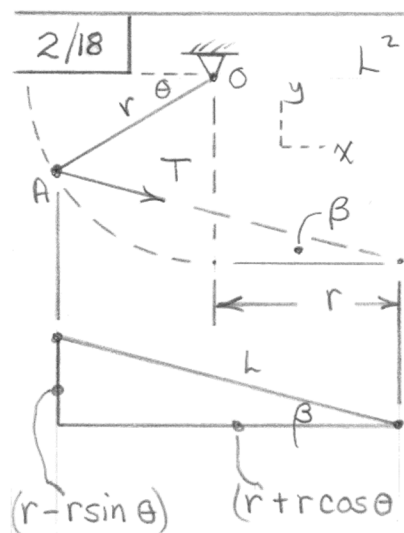


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$$L^2 = (r - r \sin \theta)^2 + (r + r \cos \theta)^2$$

$$= r^2 - 2r^2 \sin \theta + r^2 \sin^2 \theta + r^2 + 2r^2 \cos \theta + r^2 \cos^2 \theta$$

$$B = r^2 (3 + 2 \cos \theta - 2 \sin \theta)$$

$$\text{So } \cos \beta = \frac{r(1 + \cos \theta)}{r \sqrt{3 + 2 \cos \theta - 2 \sin \theta}}$$

$$= \frac{1 + \cos \theta}{\sqrt{3 + 2 \cos \theta - 2 \sin \theta}}$$

$$\sin \beta = \frac{1 - \sin \theta}{\sqrt{3 + 2 \cos \theta - 2 \sin \theta}}$$

$$T_x = T \cos \beta = \frac{T(1 + \cos \theta)}{\sqrt{3 + 2 \cos \theta - 2 \sin \theta}}$$

$$T_y = -T \sin \beta = \frac{T(\sin \theta - 1)}{\sqrt{3 + 2 \cos \theta - 2 \sin \theta}}$$

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