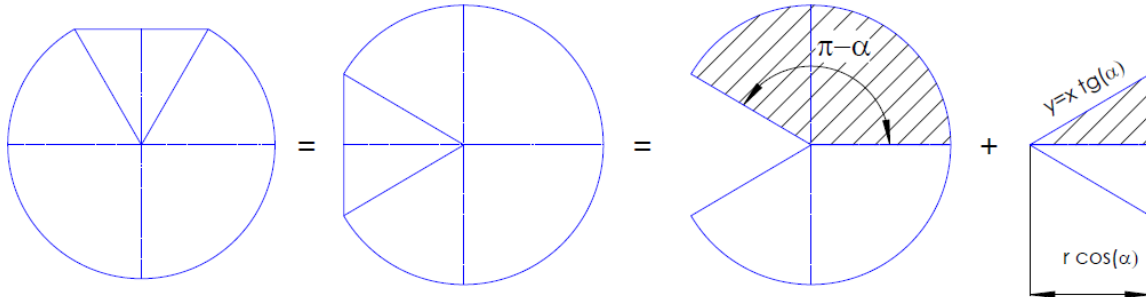


Dear Prof.

I first turn the object and divided it into two parts. Areas of these parts I evaluate using integrals. I double the obtained areas since I integrated only shaded area. I know it is not strait forward but it works and can be used in following points :)

By the way I corrected my integrals since they were a little messy.



$$2 \int_0^{\pi-\alpha} \int_0^R r d\phi dr + 2 \int_0^{R \cos \alpha} x \operatorname{tg} \alpha dx = \int_0^{\pi-\alpha} R^2 d\phi + R^2 \cos^2 \alpha \frac{\sin \alpha}{\cos \alpha} =$$

$$(\pi - \alpha) R^2 + R^2 \cos^2 \alpha \frac{\sin \alpha}{\cos \alpha} = R^2 (\pi - \alpha + \sin \alpha \cos \alpha)$$