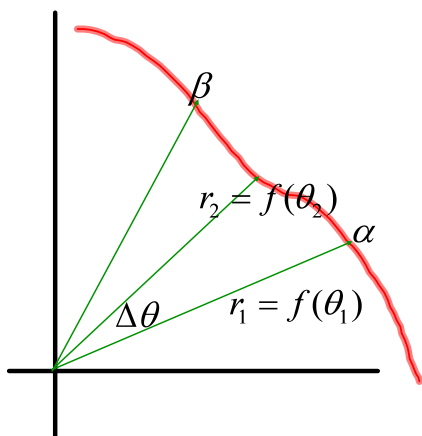


10.3b Polar Functions Area

Area of a Sector = $\frac{\theta}{2\pi} \pi r^2$ so =



$$\text{Area} \approx \sum_{k=1}^n \frac{1}{2} (f(\theta_k))^2 \cdot \Delta\theta$$

so

$$\text{Area} = \lim_{n \rightarrow \infty} \sum_{k=1}^n \frac{1}{2} (f(\theta_k))^2 \cdot \Delta\theta = \frac{1}{2} \int_{\alpha}^{\beta} (f(\theta))^2 d\theta$$

Mar 13-9:37 AM

Find the area bounded by the graph of $r = 2 + 2 \sin \theta$.

use Geo file

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Find the area of one petal of $r = 2 \sin 3\theta$.

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Find the area of one petal of $r = 4 \cos 2\theta$.

Mar 13-10:03 AM

Find the area inside $r = 3 \sin \theta$ and outside $r = 2 - \sin \theta$.

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Find the area of the common interior of $r = 3 \cos \theta$ and $r = 1 + \cos \theta$.

Mar 13-10:04 AM