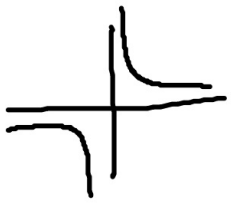
p. 557 even BC

#22 $x=-3$ vertical line

#24 $x^2+y^2=1$

#26 $xy=1$, hyperbola



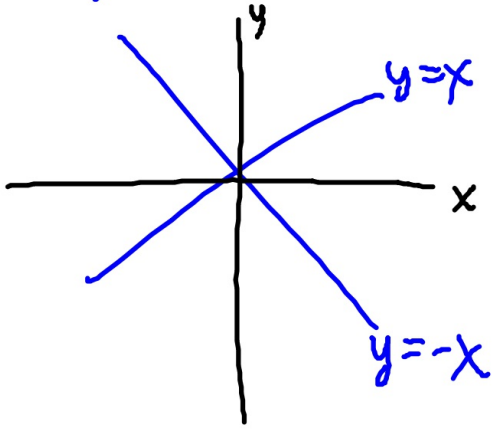
#28 $(x+2)^2+y^2=4$

circle $(-2,0)$ $r=2$

#27

$y^2=x^2$

$y=\pm x$



$\cos^2\theta=\sin^2\theta$

$1=\frac{\sin^2\theta}{\cos^2\theta}$

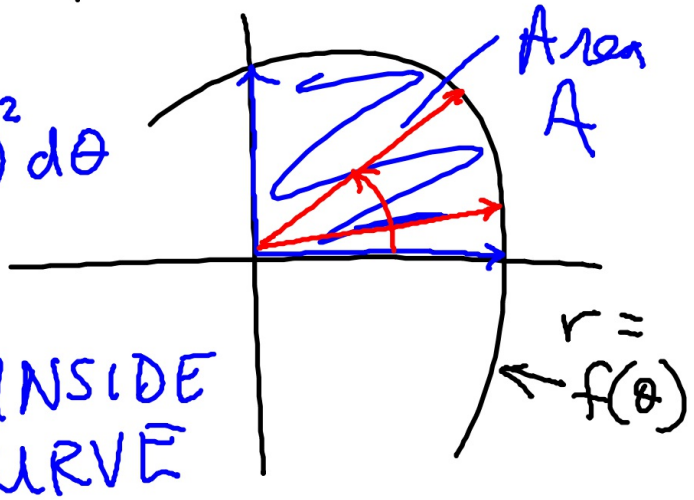
$1=\tan^2\theta$

$1=\frac{y^2}{x^2}$

$x^2=y^2$

BC Topic: polar areas

$$A = \frac{1}{2}\int_0^{\pi/2} f(\theta)^2\,d\theta$$

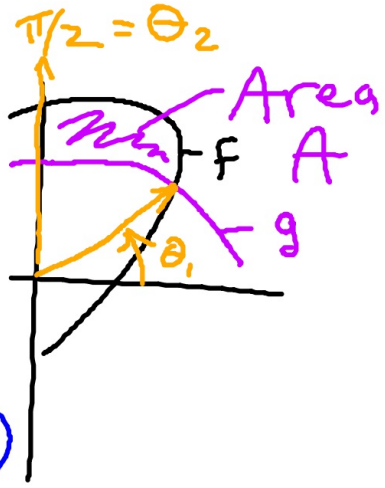


AREA INSIDE A CURVE

Area A

$$= \frac{1}{2}\int_{\theta_1}^{\theta_2} f(\theta)^2\,d\theta - \frac{1}{2}\int_{\theta_1}^{\theta_2} g(\theta)^2\,d\theta$$

$$A = \frac{1}{2}\int_{\theta_1}^{\theta_2} \left(f(\theta)^2 - g(\theta)^2\right)d\theta$$



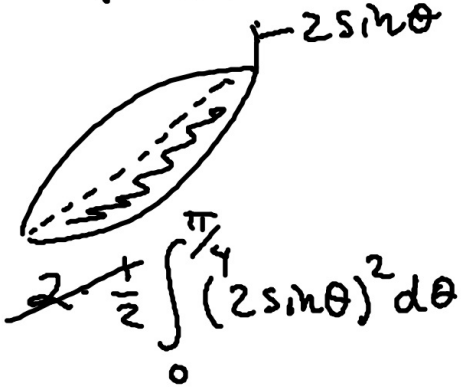
AREA BETWEEN CURVES

#43 $r = 4 + 2\cos\theta$

$$2 \cdot \frac{1}{2} \int_0^{\pi} \underbrace{(4+2\cos\theta)}_{r}^2 \, d\theta$$

$$= 18\pi$$

#51 area "between"
$r = 2\cos\theta$ and
$r = 2\sin\theta$



~~2~~ $\cdot \frac{1}{2} \int_0^{\pi/4} (2\sin\theta)^2 \, d\theta$