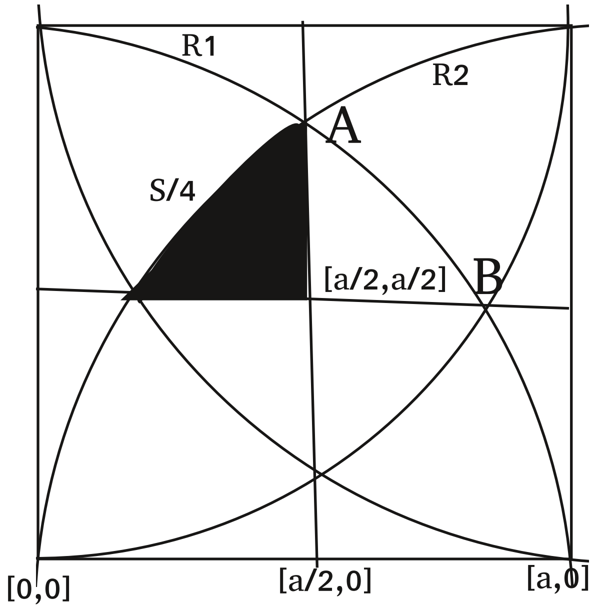


R1: $y^2 = a^2-x^2$

R2: $y^2 = a^2-(x-a)^2$

A=?

$a^2-x^2=a^2-(x-a)^2$

$-x^2=-(x^2-2xa+a^2)$

$-x^2=-x^2+2xa-a^2$

$0 = 2xa - a^2$

$0 = a(2x-a)$

$2x-a = 0$

$x= a/2$

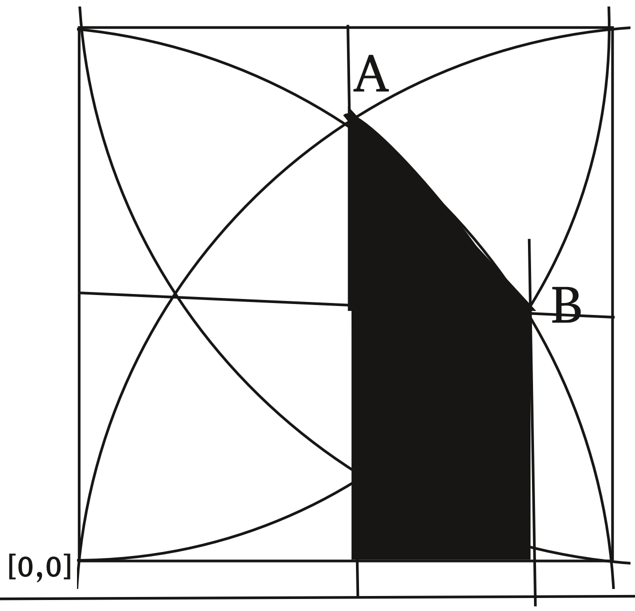
$y^2 = a^2 - a^2/4$

$y2 = 3a^2/4$

$y = a/2*\sqrt{(3)}$

$A = [a/2,\ a/2*\sqrt{(3)}]$

$B = [a/2*\sqrt{(3)},\ a/2]$



$$S/4=\int_{a/2}^{a/2*\sqrt{(3)}} \sqrt{(a^2-x^2)}dx-[a/2*(a/2*\sqrt{(3)}-a/2)]$$ [1]

$S/4 = \pi*a^2/12 - a^2/4 * \sqrt{(3)} - a^2/4$

$S = \pi*a^2/3 - a^2*\sqrt{(3)} + a^2$

$$S = a^2*(\pi/3 - \sqrt{(3)} + 1)$$

$$S = a^2 * 0.315146743622772$$

$$\int_{a/2}^{a/2*\sqrt{(3)}} \sqrt{(a^2-x^2)}dx =$$

subst. method. $x=a\sin(t)$; $dx=a\cos(t)dt$; $t=\sin^{-1}(x/a)$; $\sin(t)=x/a$; $\sin(2t)=2x/a*\sqrt{(1-x^2/a^2)}$

integrate,cont. $a*\int[\sqrt{(a^2-a^2\sin^2(t))}]dt = a*\int[a*\cos^2(t)dt = a^2*\int(\cos^2(t))dt$

$=a^2*\int[1/2*\cos(2t)+1/2]dt=a^2/2*\int[\cos(2t)+1]dt=a^2/2*\int[\cos(2t)]dt + a^2/2*t$

$=a^2/4*\sin(2t) + a^2/2t = a^2/4*2x/2*\sqrt{(1-x^2/a^2)}+a^2/2*\sin^{-1}(x/2)=x/2*\sqrt{(a^2-x^2)}+a^2/2*\sin^{-1}(x/2)$.

$[a/2 \to a/2*\sqrt{(3)}] =$

$=(a*\sqrt{(3)}/4*\sqrt{(a^2-a^2*3/4)}+a^2/2*\sin^{-1}(\sqrt{(3)}/2))-(a/4*\sqrt{(a^2-a^2/4}+a^2/2*\sin^{-1}(1/2))$

$=(a^2*\sqrt{(3)}/4*\sqrt{(1/4)}+a^2/2*\sin^{-1}(\sqrt{(3)}/2))-(a^2/3*\sqrt{(3/4)}+a^2/2*\sin^{-1}(1/2))$

$=a^2*\sqrt{(3)}/8 + a^2/2*\sin^{-1}(\sqrt{(3)}/2)-a^2*\sqrt{(3)}/8+a^2/2*\sin^{-1}(1/2)=a^2/2*(\sin^{-1}(\sqrt{(3)}/2)-\sin^{-1}(1/2)) =$

$a^2/2*(\pi/3 - \pi/6) = \pi*a^2/12$