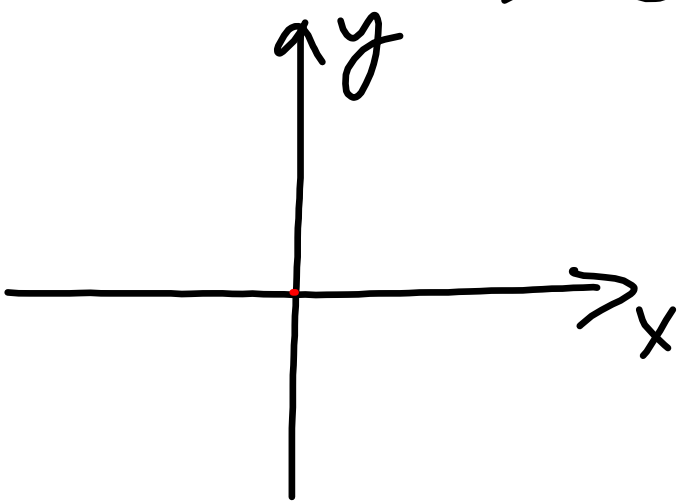
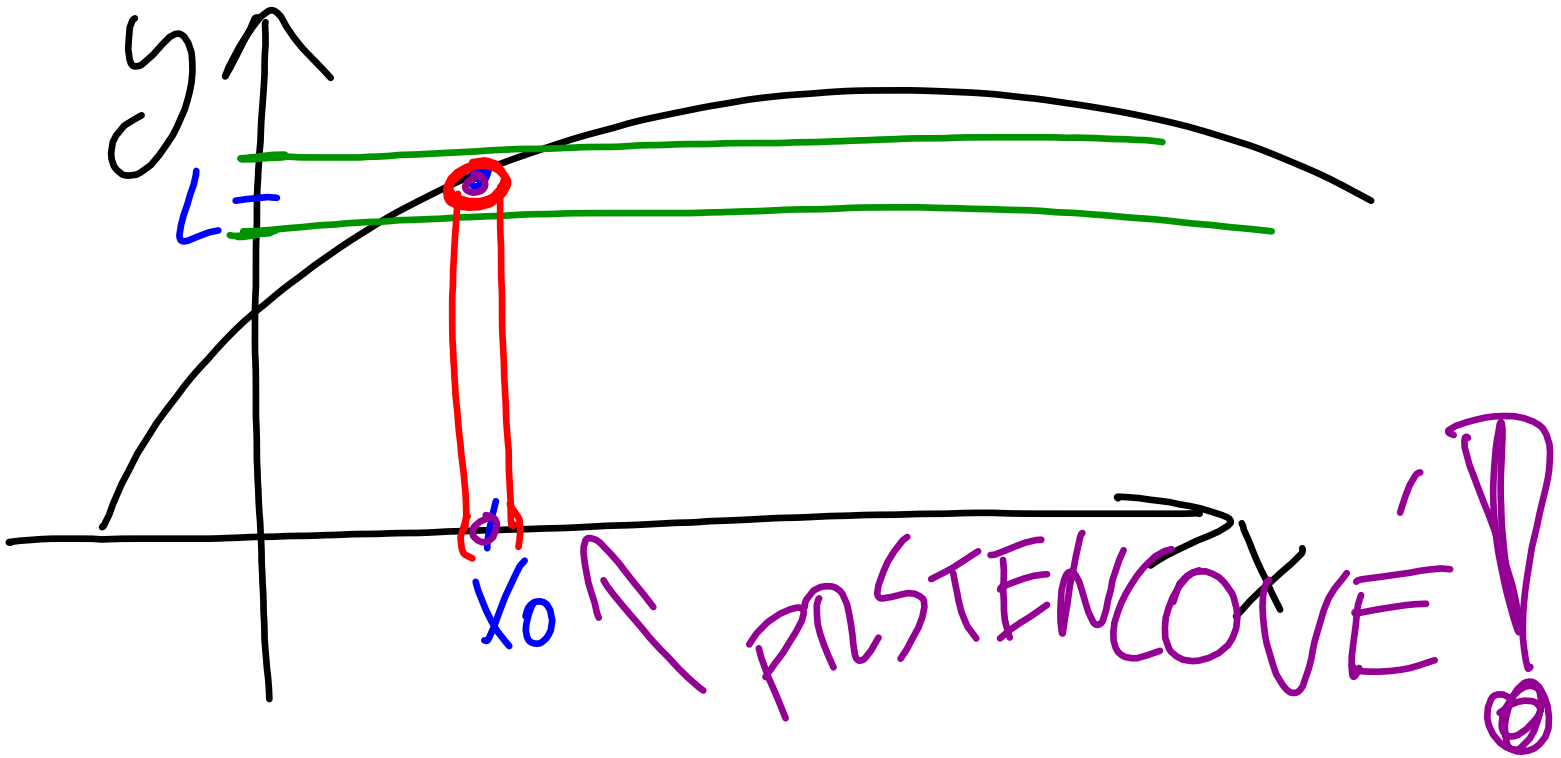
$$x + y + 2 = 3$$

$S_{xy} \Rightarrow z = 0 \Rightarrow 0 = \sqrt{x^2 + y^2}$




y
L
x0
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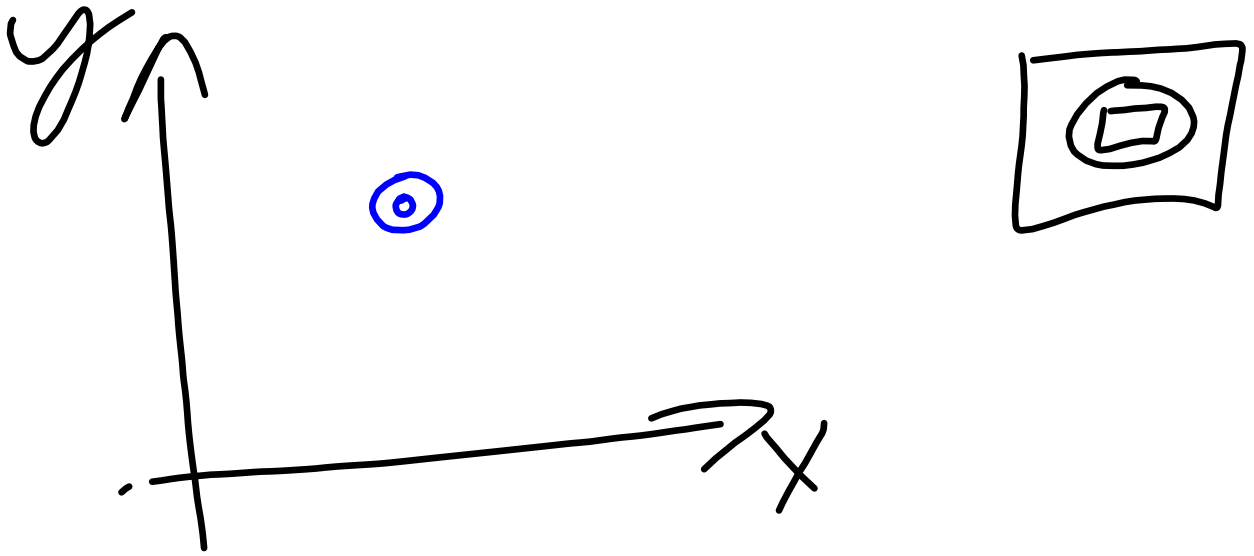
y
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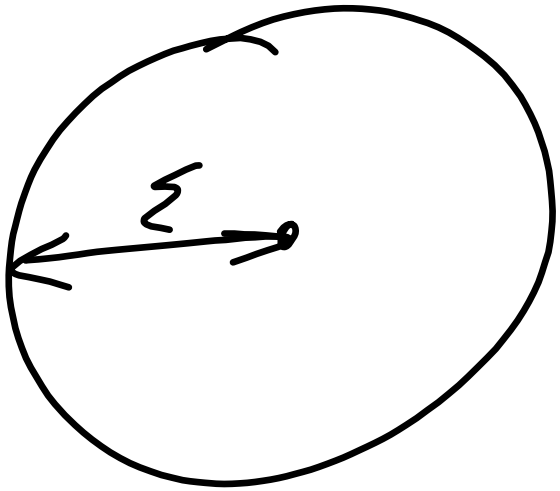

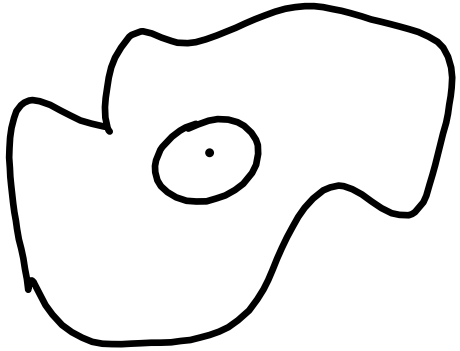

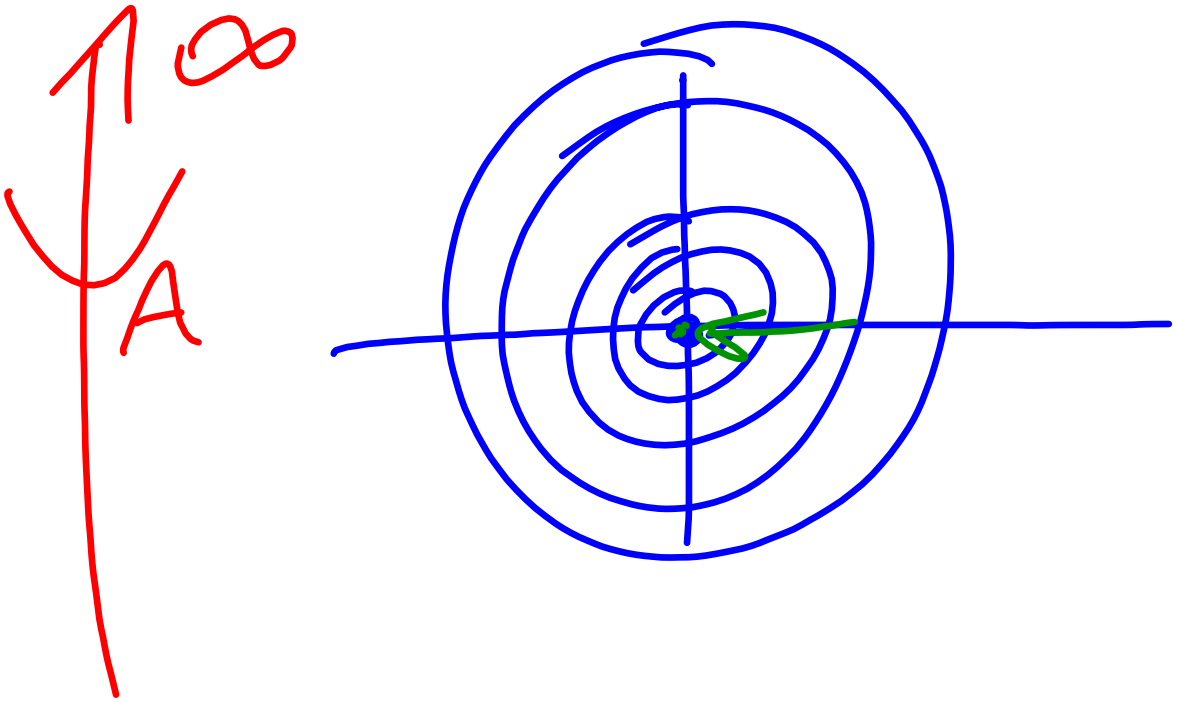
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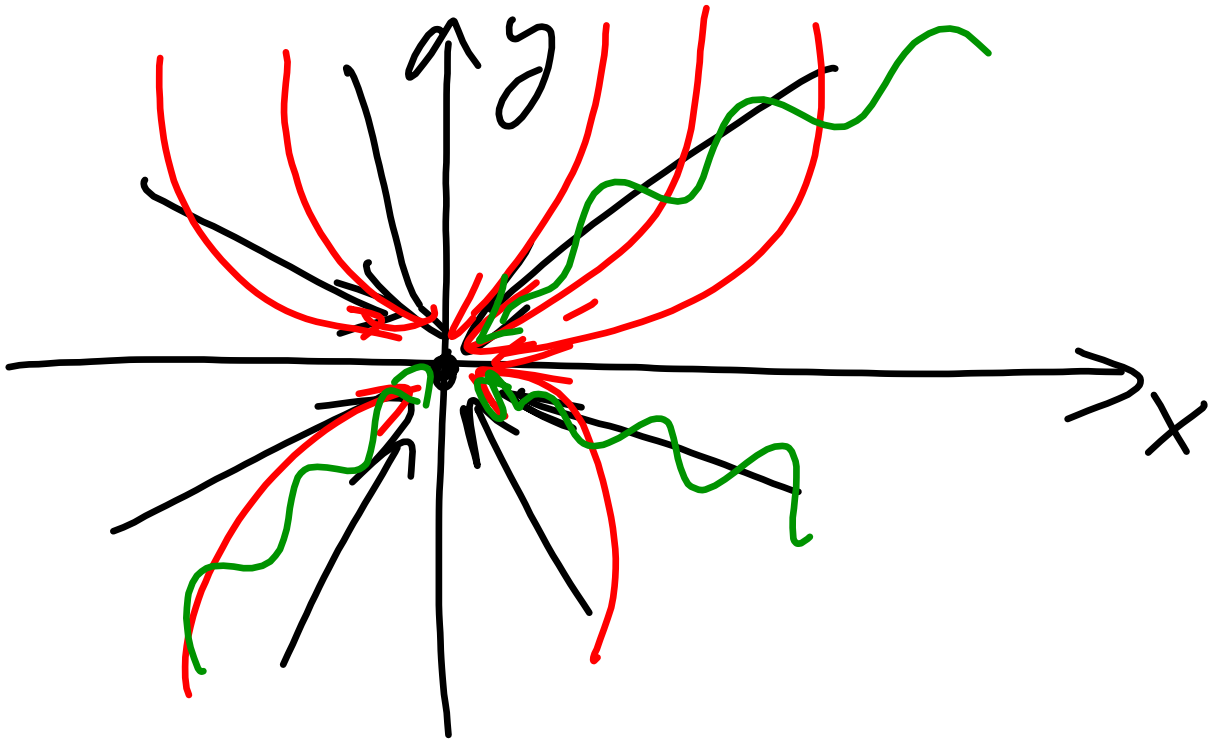
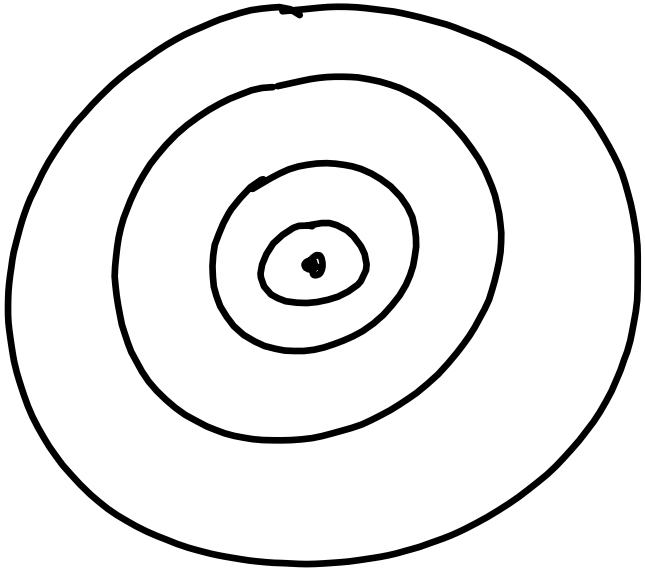
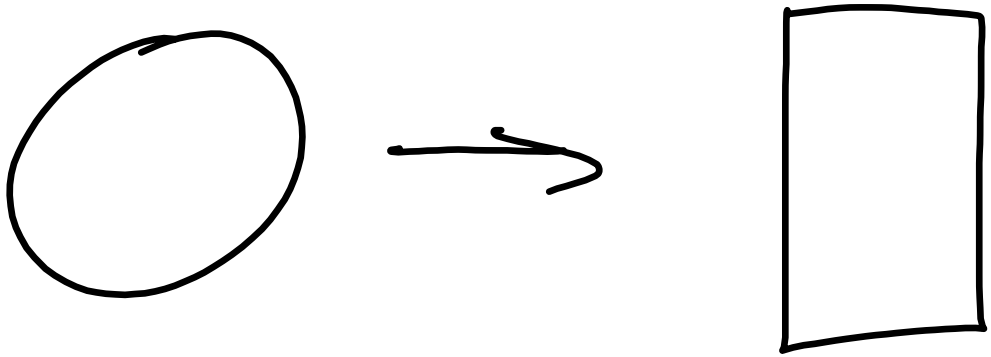
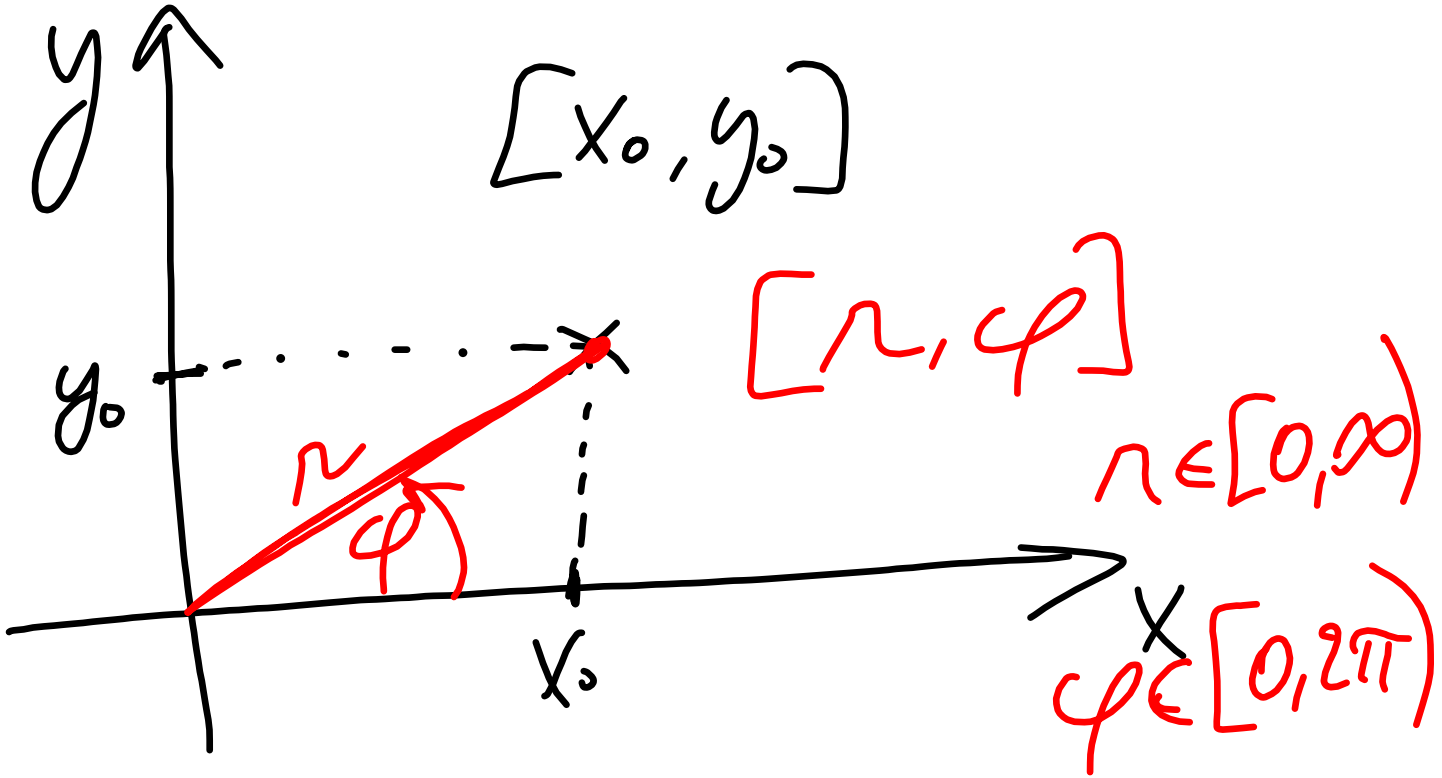
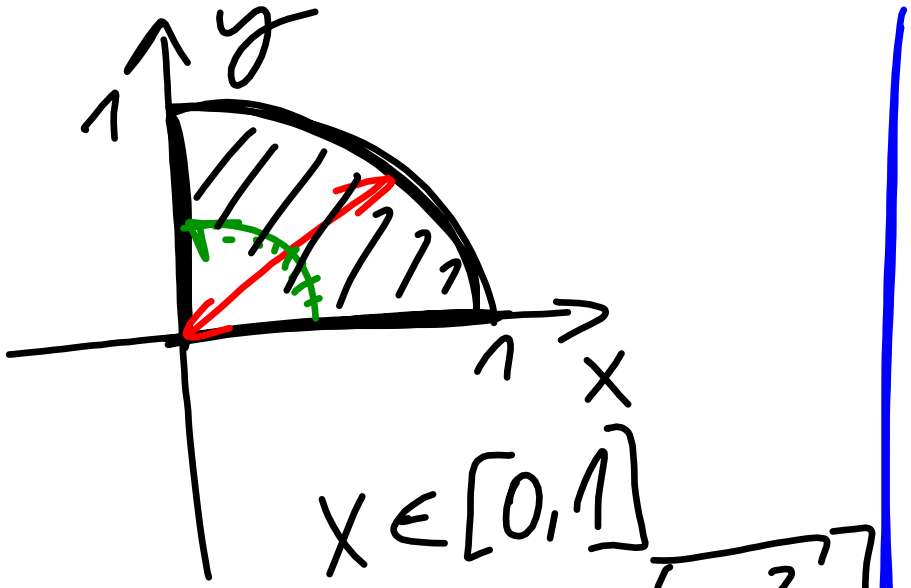

y
x



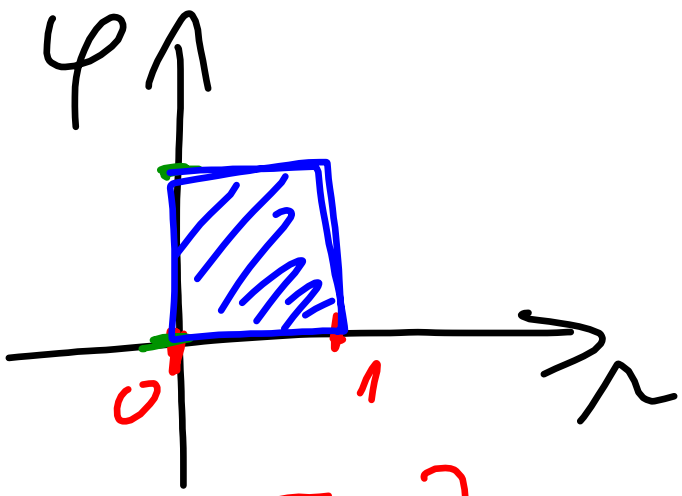



y
$[x_0, y_0]$
y_0
r
φ
x_0
x
$[r, \varphi]$
$r \in [0, \infty)$
$\varphi \in [0, 2\pi)$



$x \in [0,1]$

$y \in [0, \sqrt{1-x^2}]$



$r \in [0,1]$

$\varphi \in [0, \frac{\pi}{2}]$

$$x = x_0 + r \cdot \cos\varphi$$
$$y = y_0 + r \cdot \sin\varphi$$

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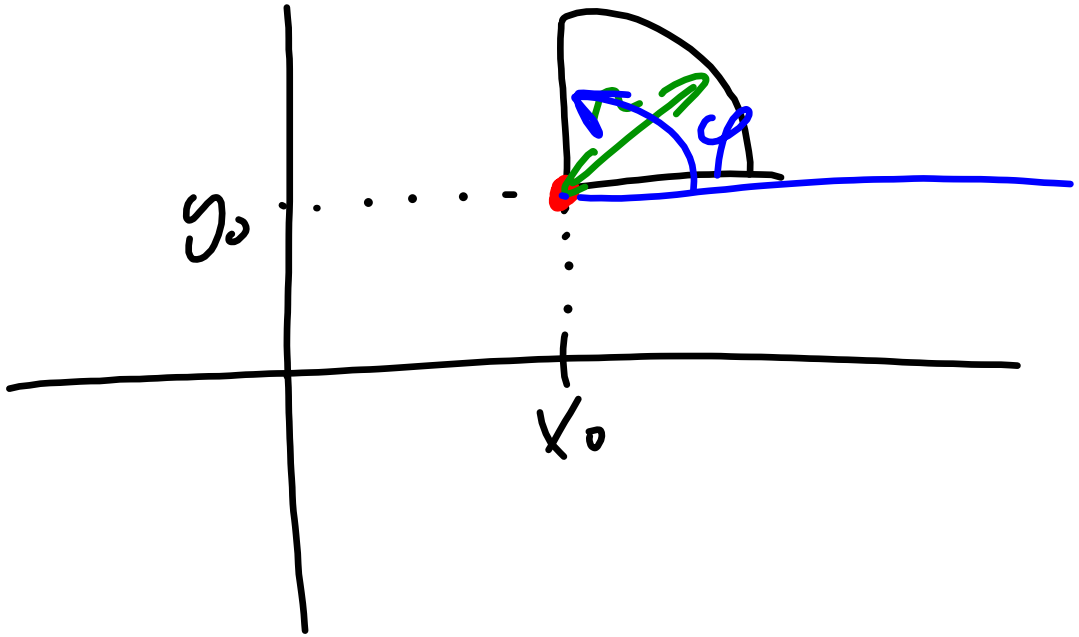
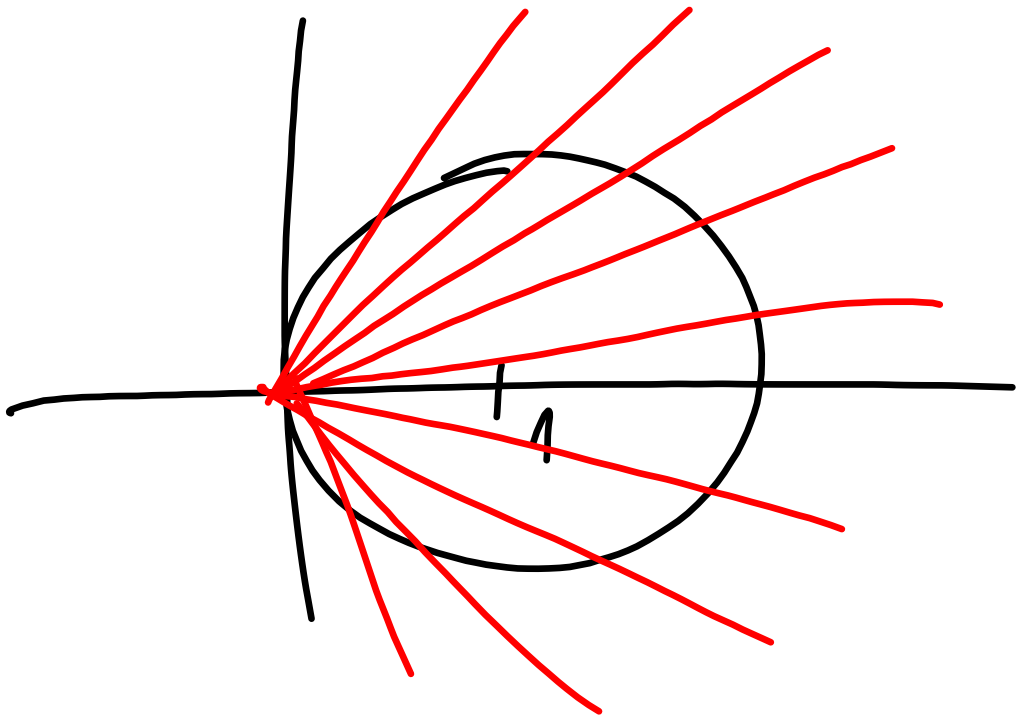
$$\Leftrightarrow \quad x - x_0 = r \cdot \cos\varphi$$
$$y - y_0 = r \cdot \sin\varphi$$


y_0
x_0
r
φ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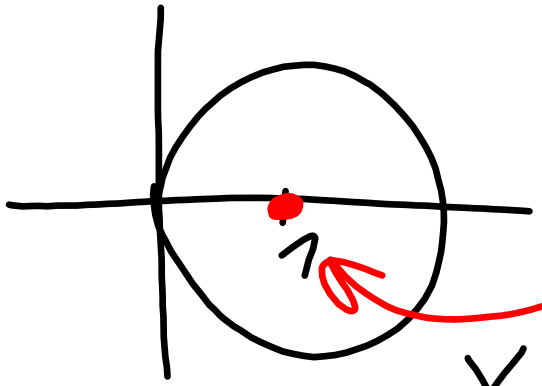
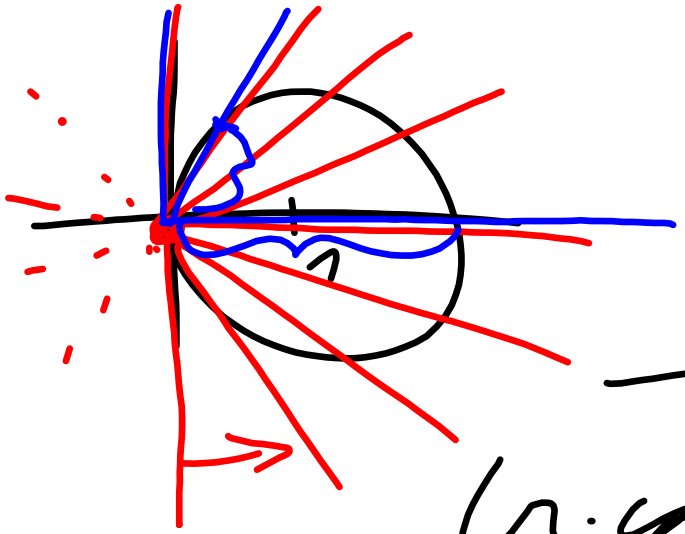


$$(x-1)^2 + y^2 \leq 1$$

$$x - 1 = r \cdot \cos\varphi \qquad r \in [0,1]$$

$$y - 0 = r \cdot \sin\varphi \qquad \varphi \in [0, 2\pi)$$



$\varphi \in \left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$

$x = r\cdot\cos\varphi,\ y = r\cdot\sin\varphi$

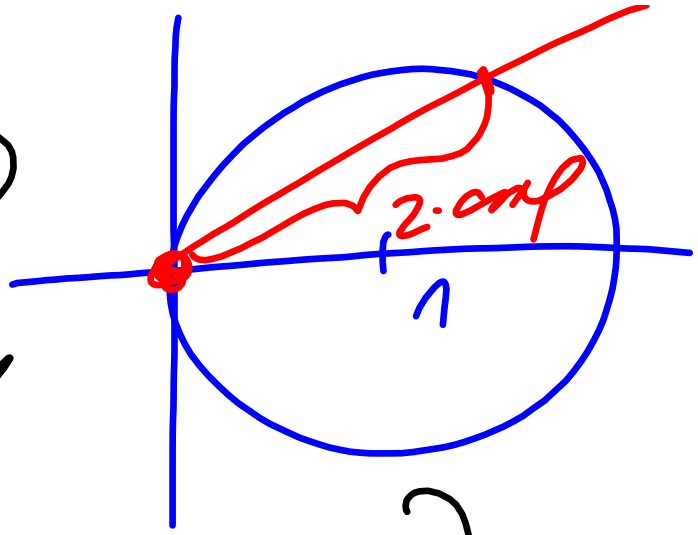
$(r\cdot\cos\varphi - 1)^2 + (r\sin\varphi)^2 = 1$

$r^2\cos^2\varphi - 2r\cos\varphi + 1 + r^2\sin^2\varphi = 1$

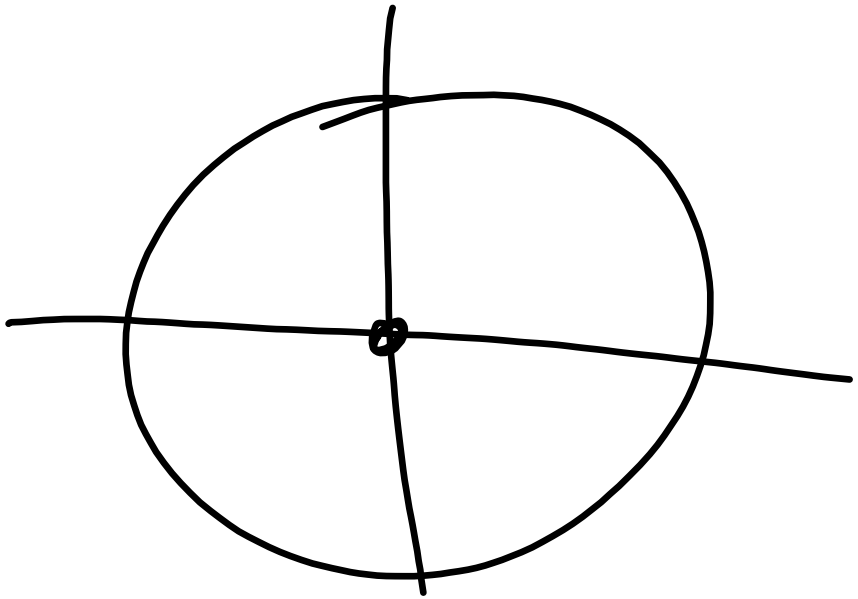
$r^2\cdot(\underbrace{\cos^2\varphi + \sin^2\varphi}_{=1}) - 2r\cos\varphi = 0$

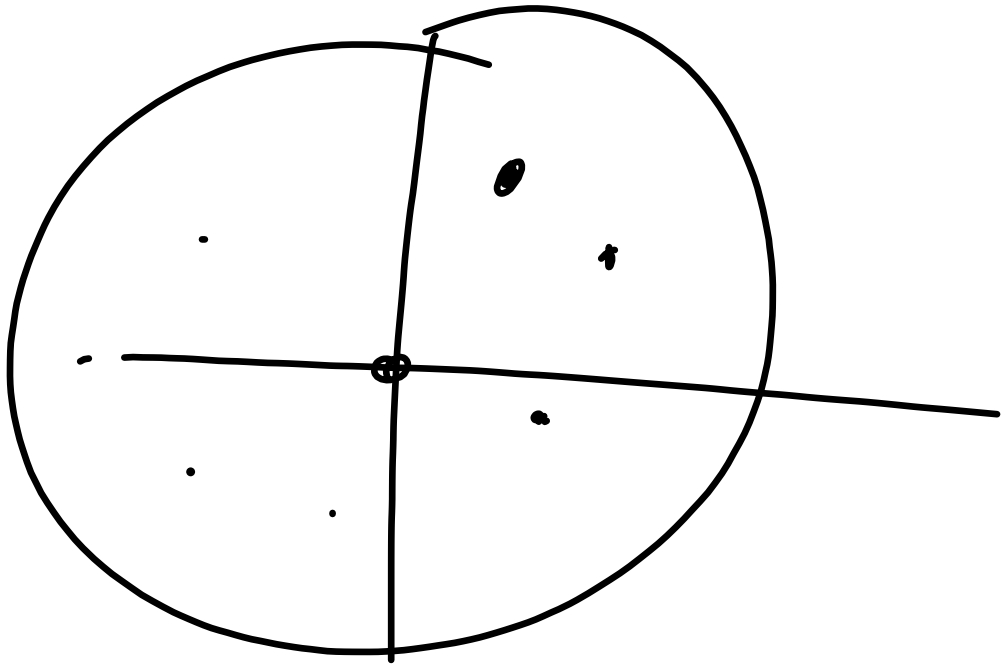
$$r \cdot (r - 2\sin\varphi) = 0$$

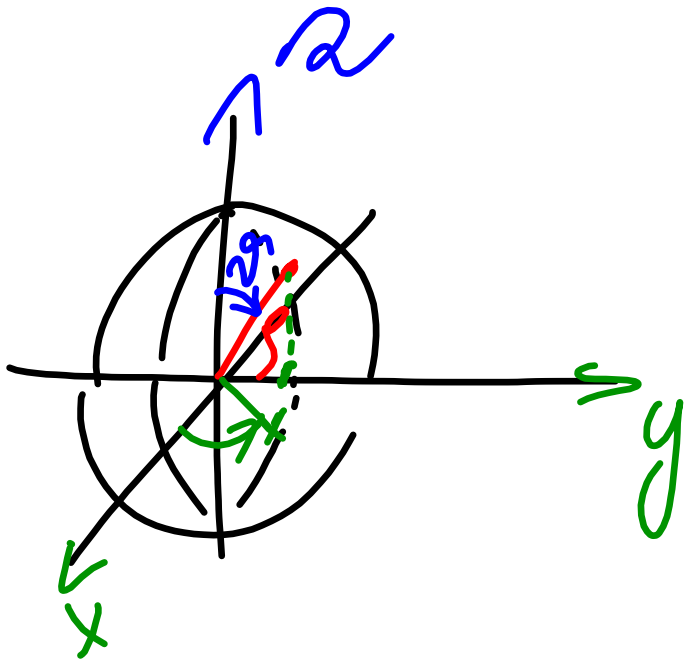
$$r = 0, \quad r = 2\cdot\sin\varphi$$

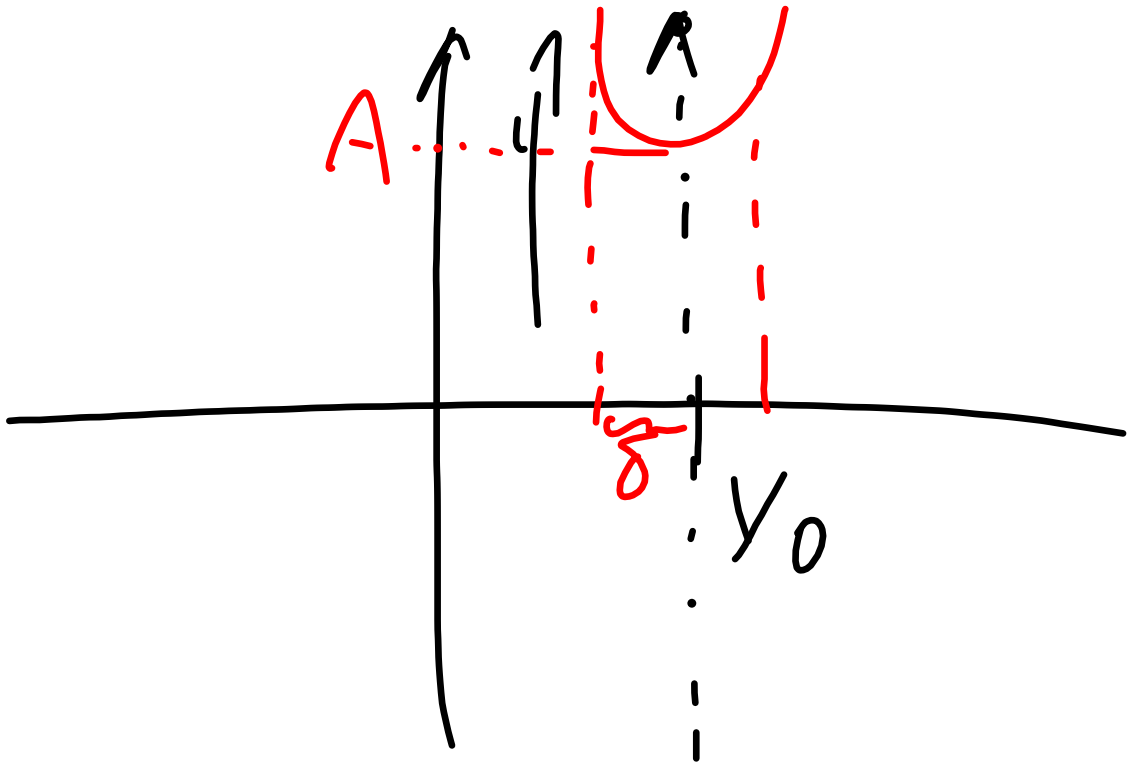


$$r \in [0, 2\cdot\sin\varphi]$$






z
2φ
y
x


A
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y_0