

Coordenadas polares - Parte 2: Cônicas

Ademir Alves Ribeiro

2021

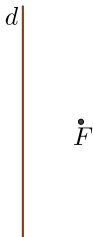
<https://youtu.be/HrXl3Gn9diQ>



A elipse em coordenadas polares

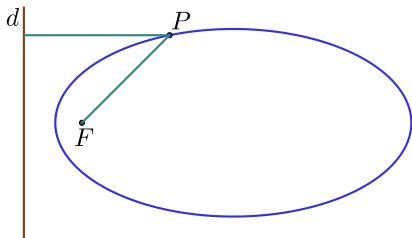
A elipse em coordenadas polares

- Foco e diretriz;
- Excentricidade $e \in (0, 1)$;



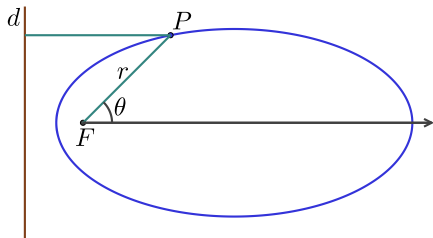
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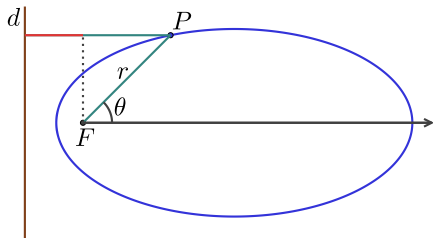
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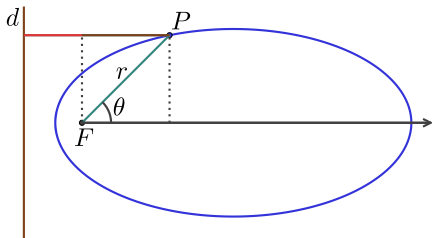
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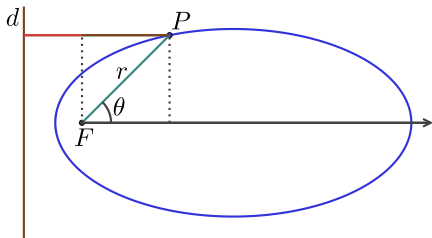
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- $r \cos \theta$;



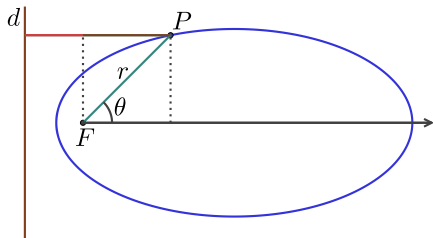
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- $r = e(r \cos \theta + p)$;
- $r = \frac{ep}{1 - e \cos \theta}$.



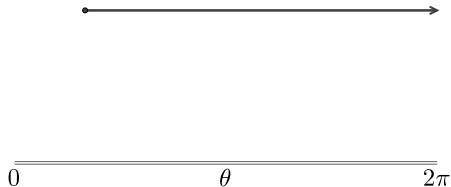
Equação polar da elipse

$$r = \frac{ep}{1 - e \cos \theta}$$

O intervalo para θ

Equação polar da elipse

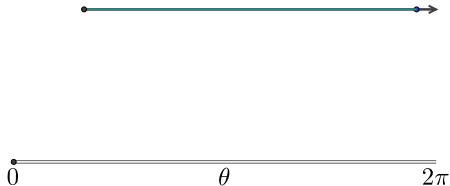
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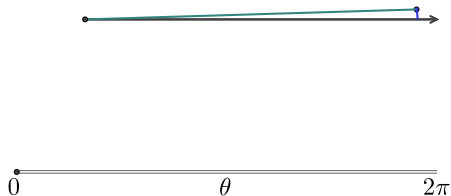
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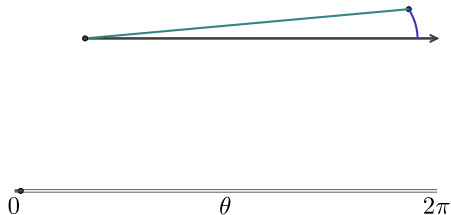
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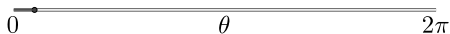
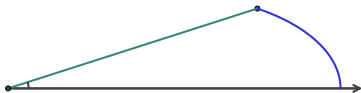
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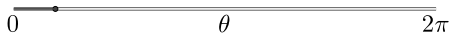
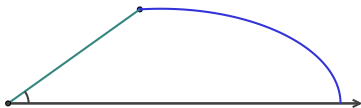
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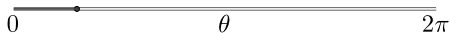
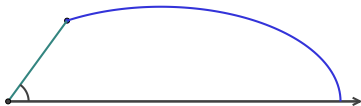
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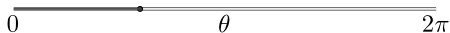
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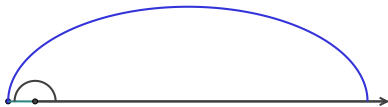
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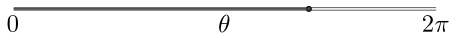
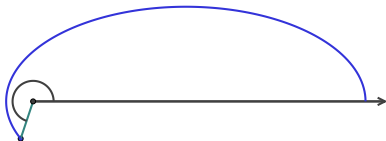
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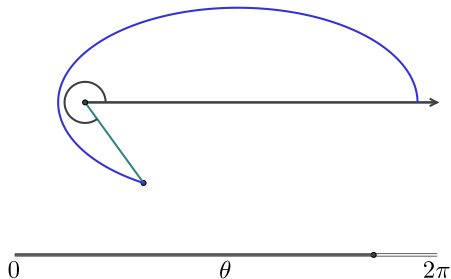
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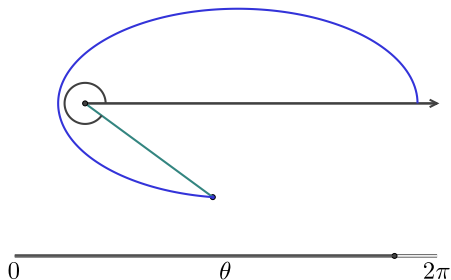
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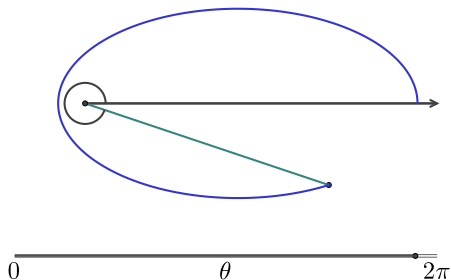
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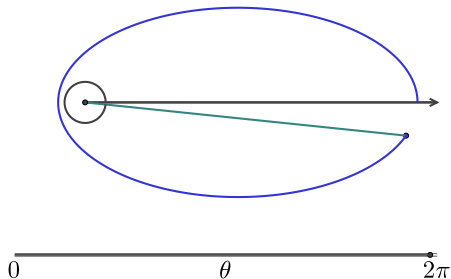
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O intervalo para θ

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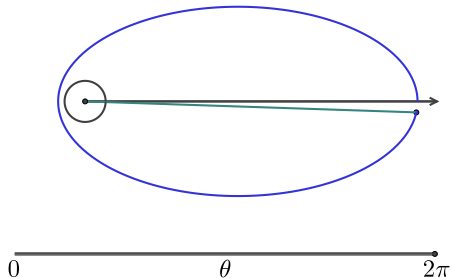
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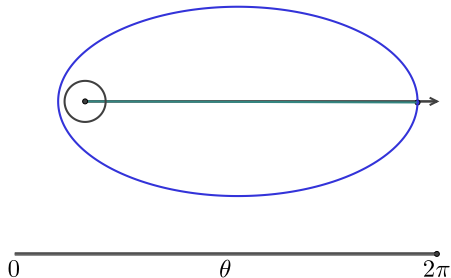
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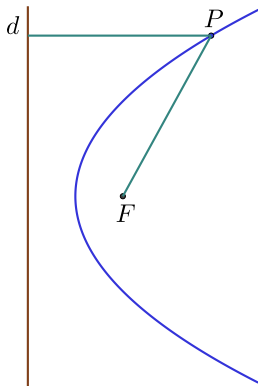
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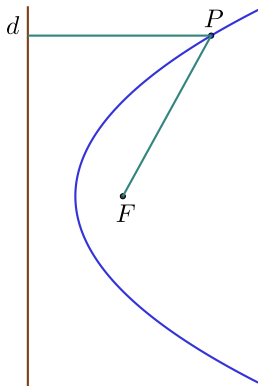


A parábola em coordenadas polares



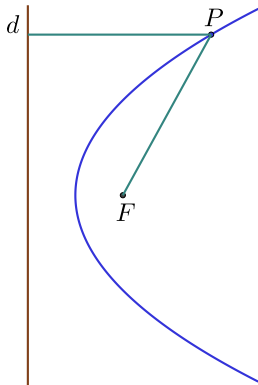
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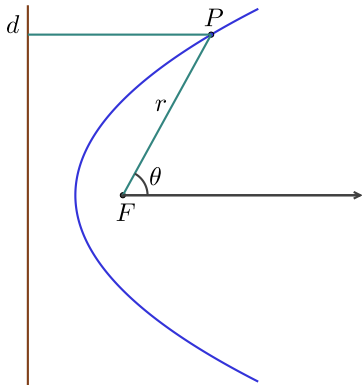
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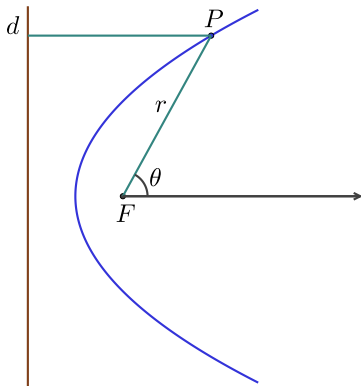
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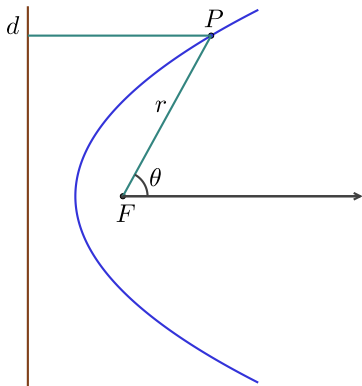
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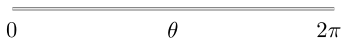
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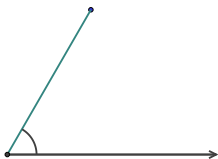
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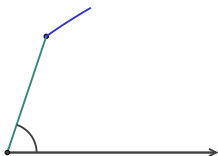
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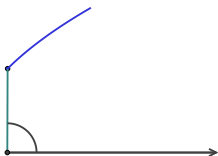
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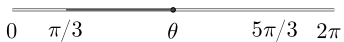
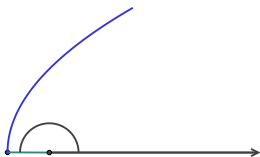
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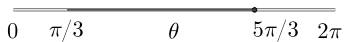
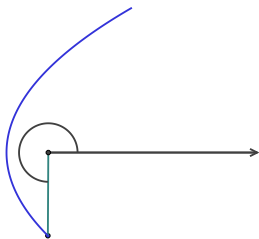
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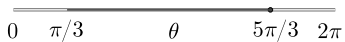
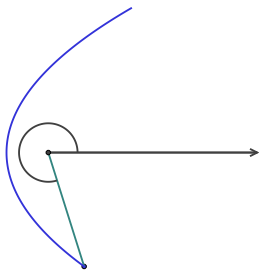
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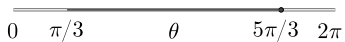
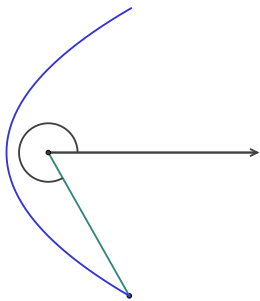
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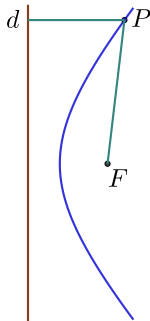
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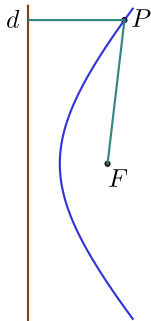
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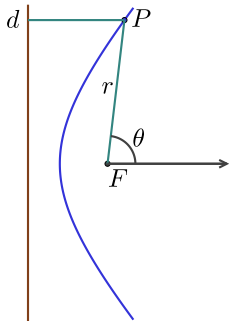
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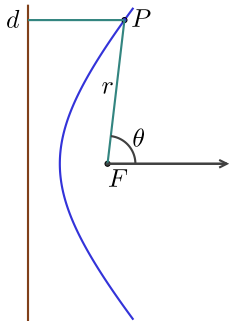
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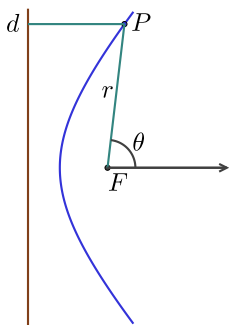
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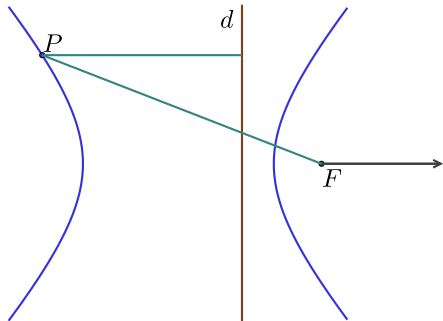
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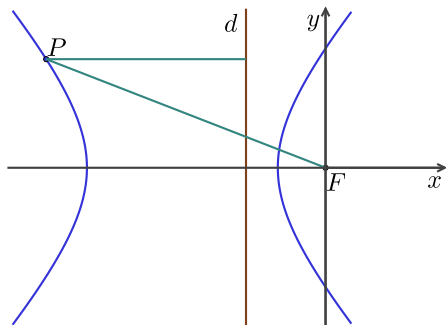
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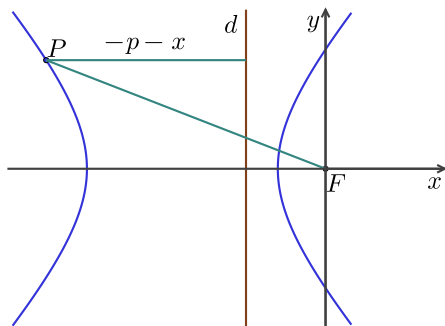
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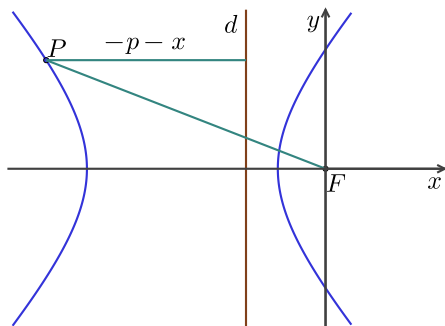
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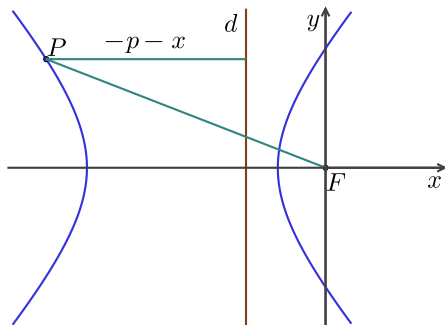
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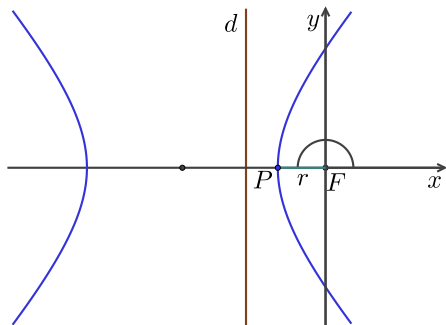
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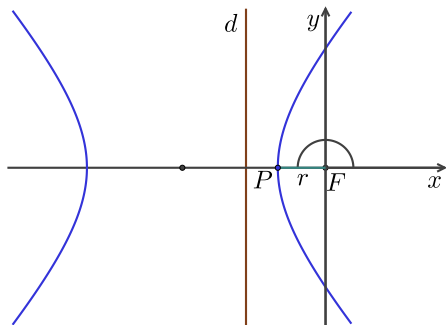
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- Obs.: Note que $\theta = \pi \Rightarrow \frac{ep}{1 + e} = c - a$



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- Obs.: Note que $\theta = \pi \Rightarrow \frac{ep}{1 + e} = c - a \Rightarrow a = \frac{ep}{e^2 - 1}$.

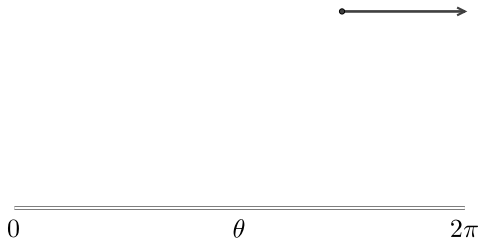


Os intervalos para θ

Equações polares da hipérbole

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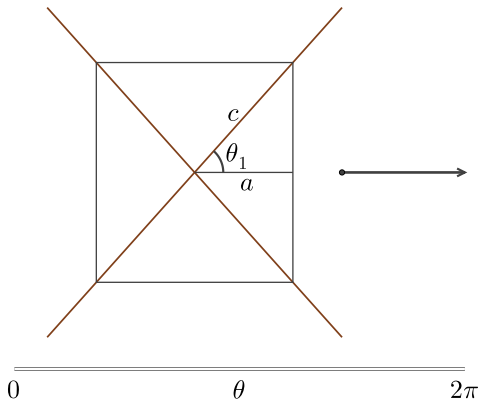


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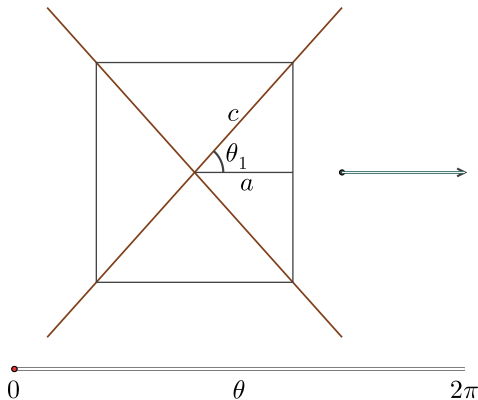


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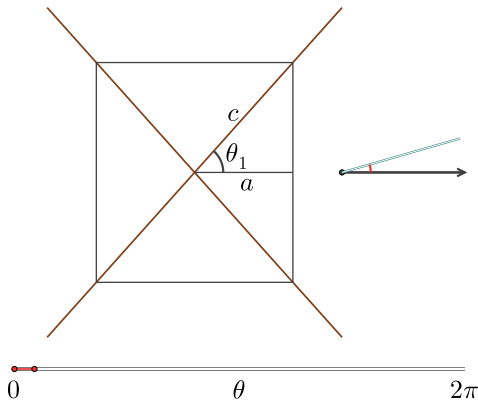


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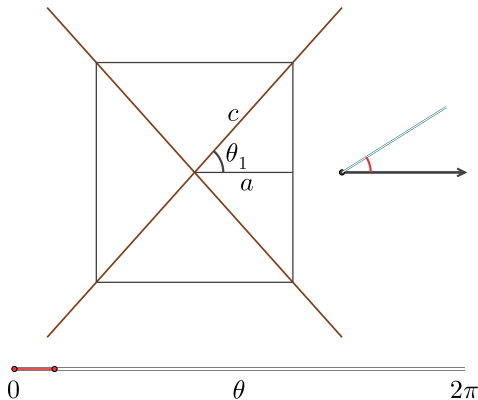


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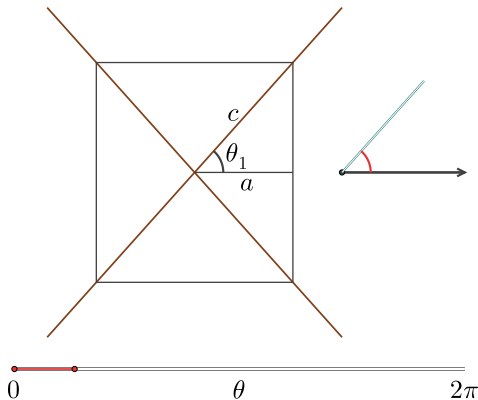


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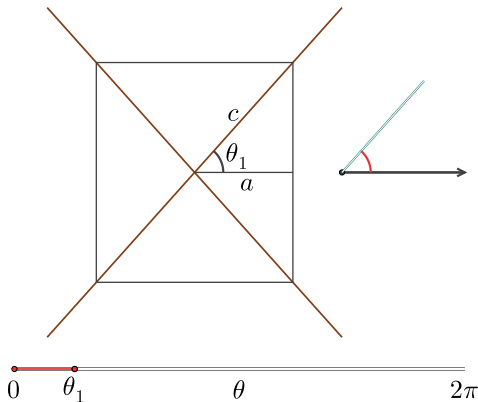


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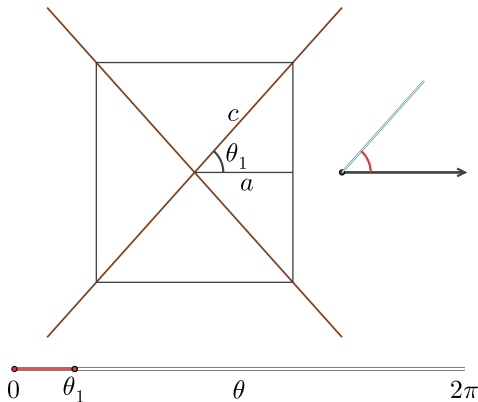


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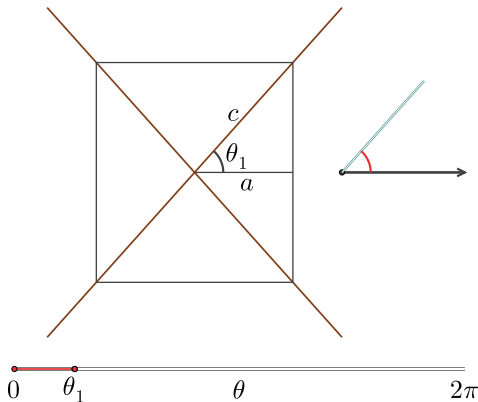


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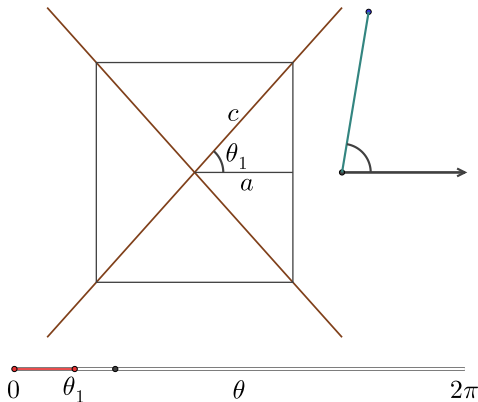


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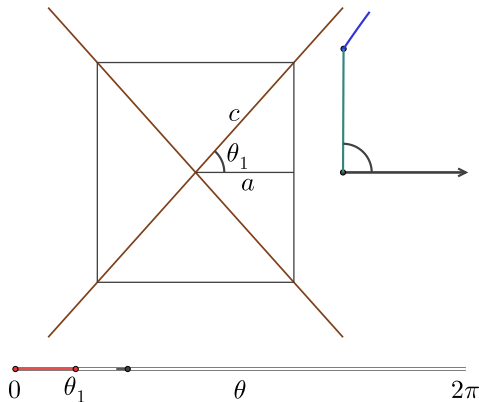


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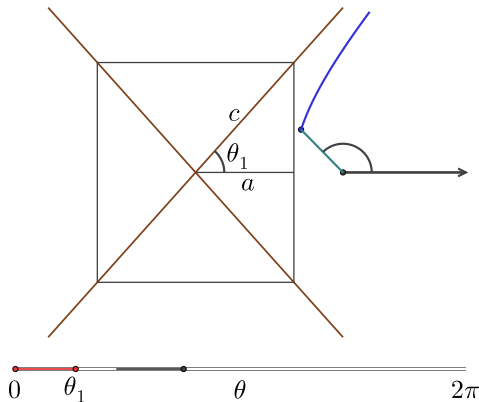


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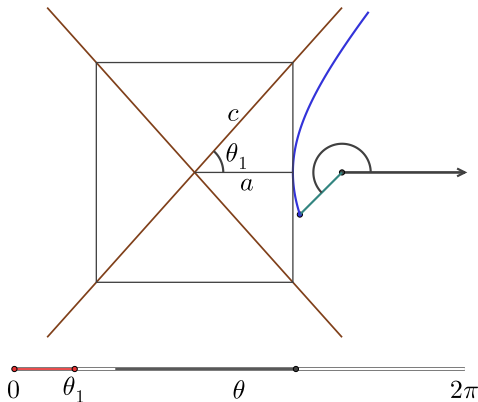


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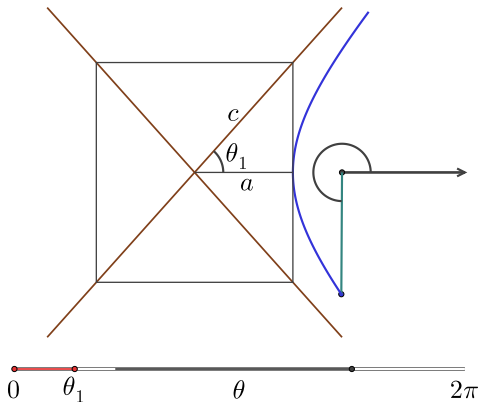


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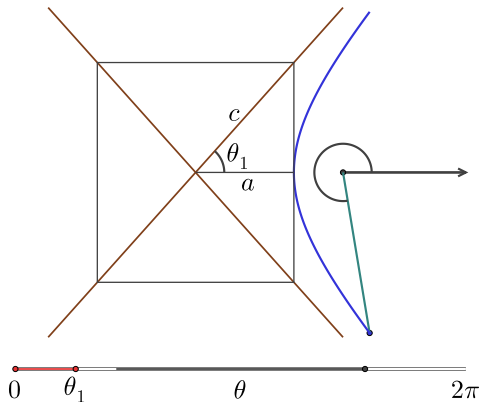


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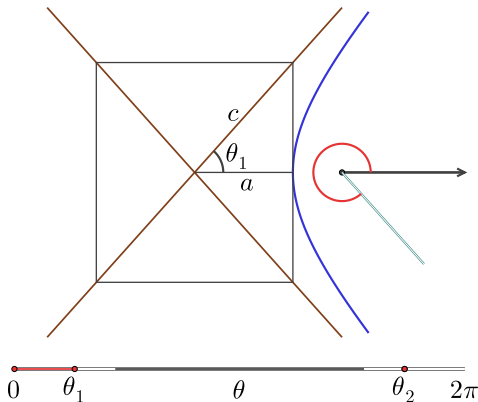


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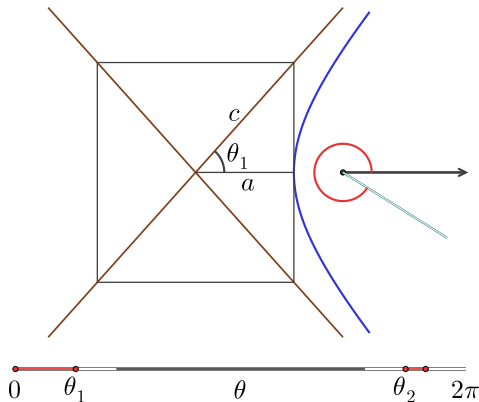


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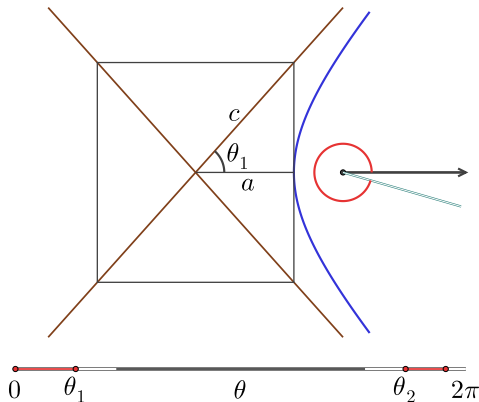


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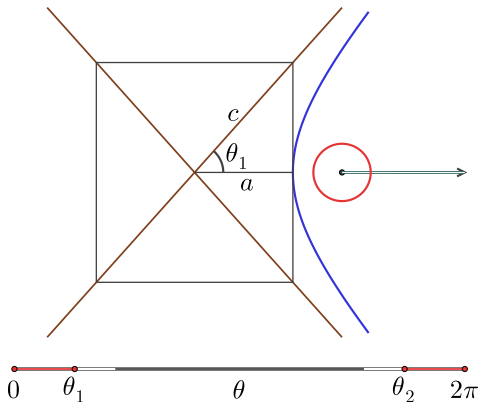


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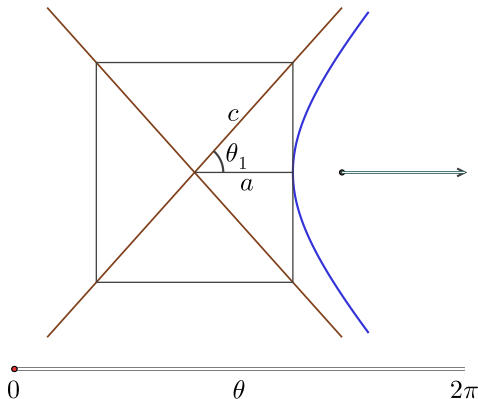


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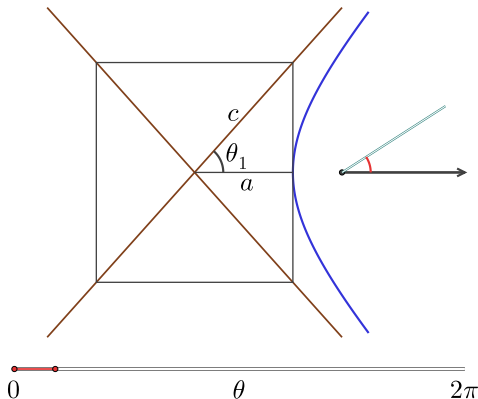


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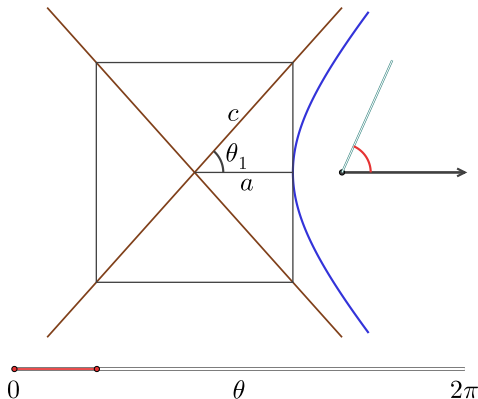


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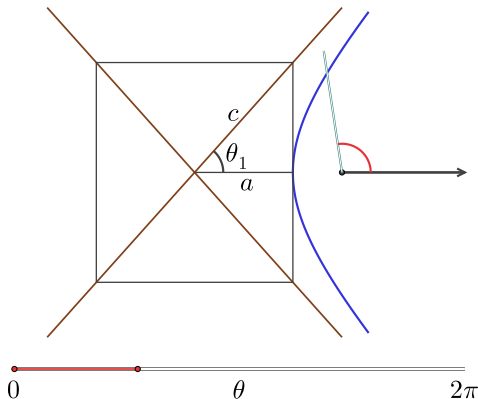


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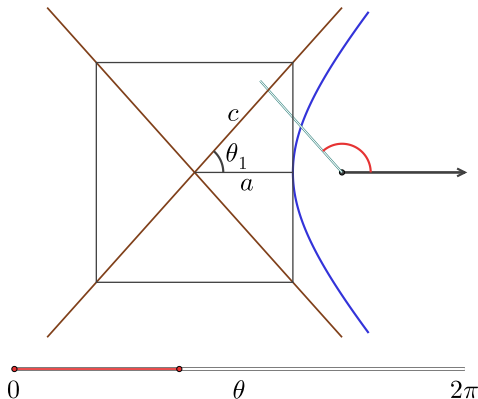


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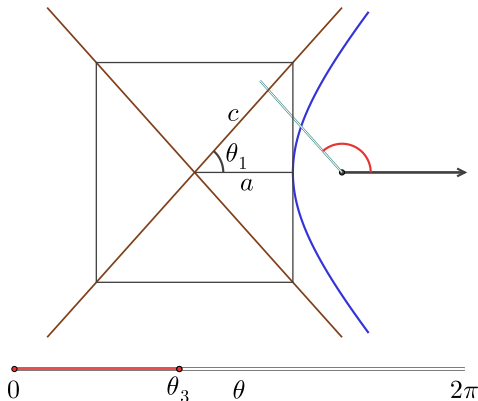


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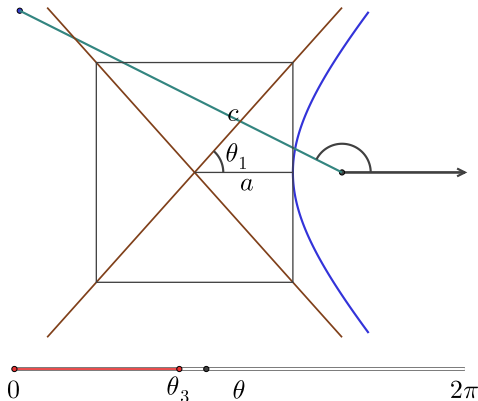


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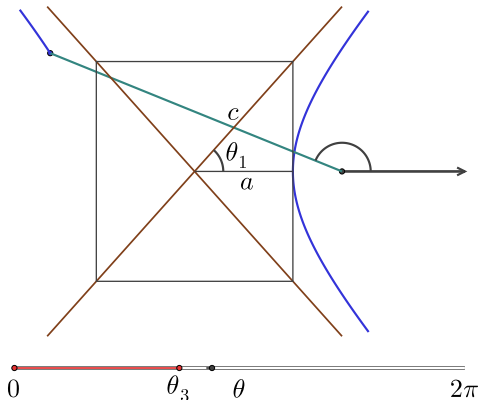


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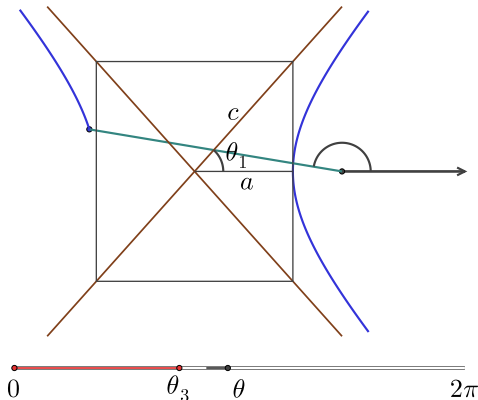


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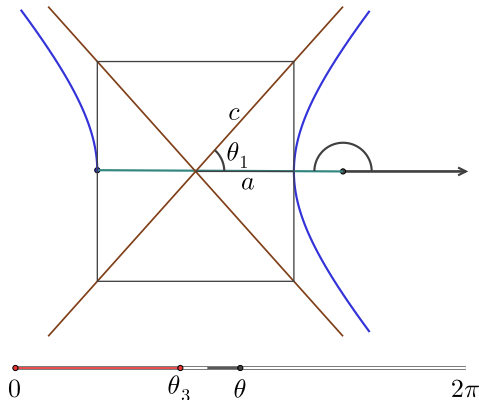


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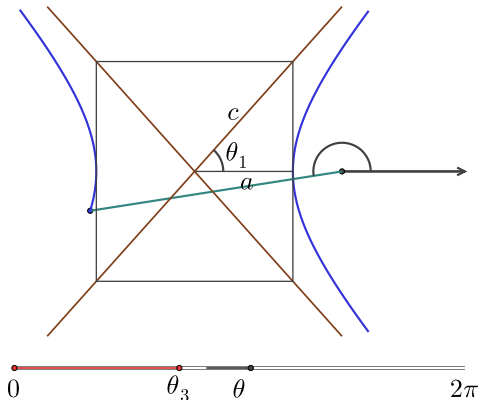


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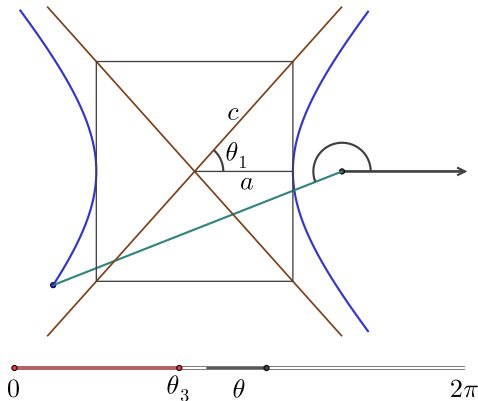


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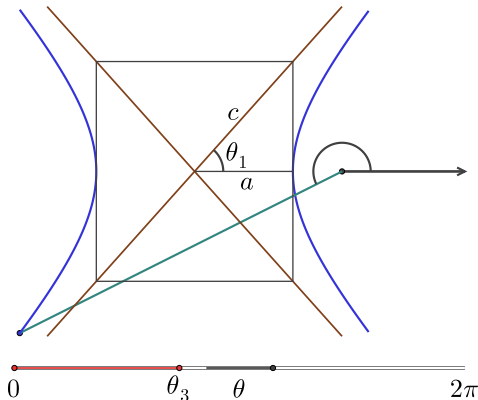


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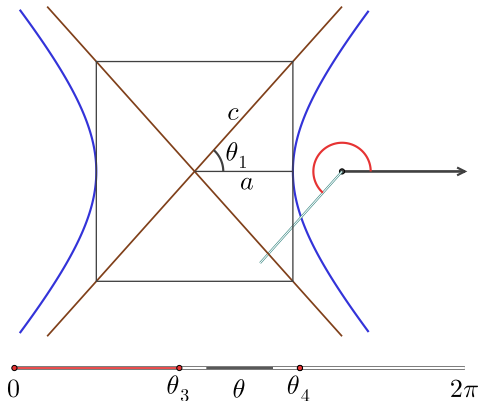


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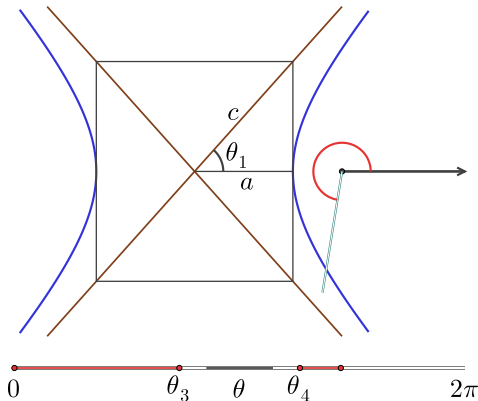


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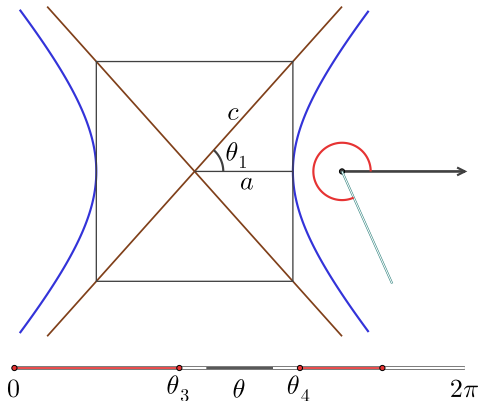


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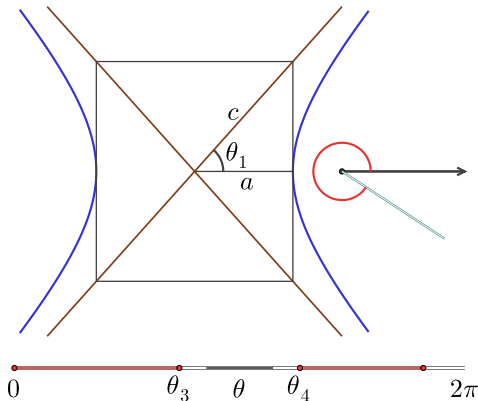


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