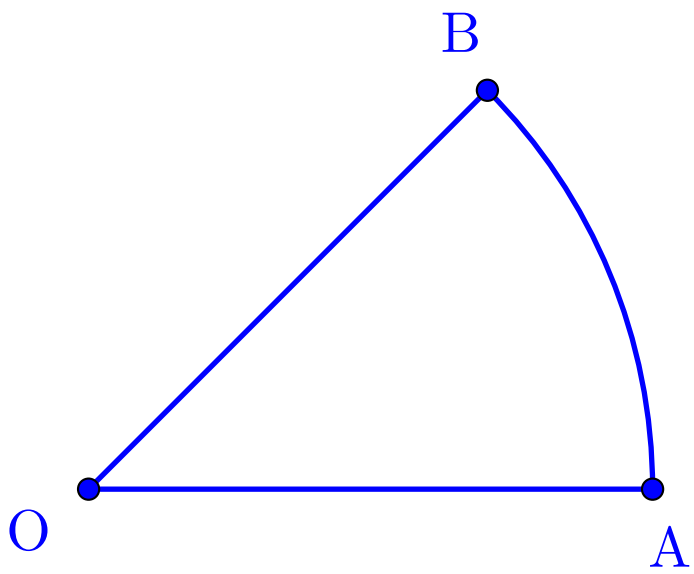
$$\lim_{\theta \to 0} \frac{\sin \theta}{\theta} = 1$$

$$\lim_{\theta \to 0} \frac{\sin \theta}{\theta} = 1$$

Start End

Start End



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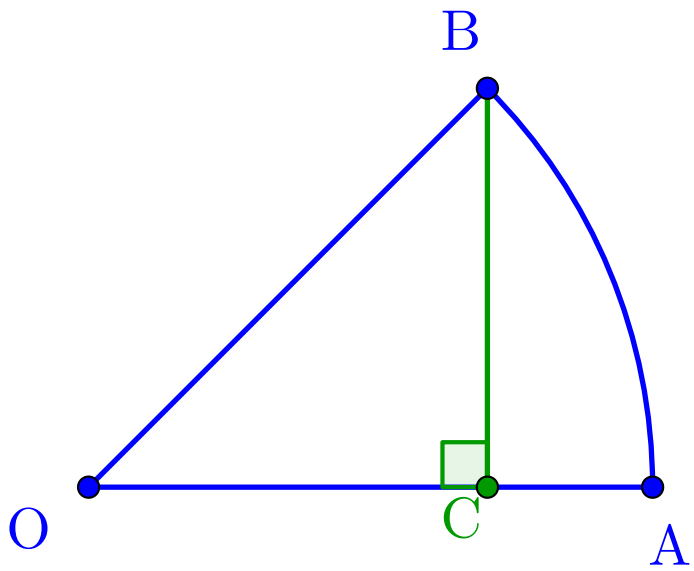

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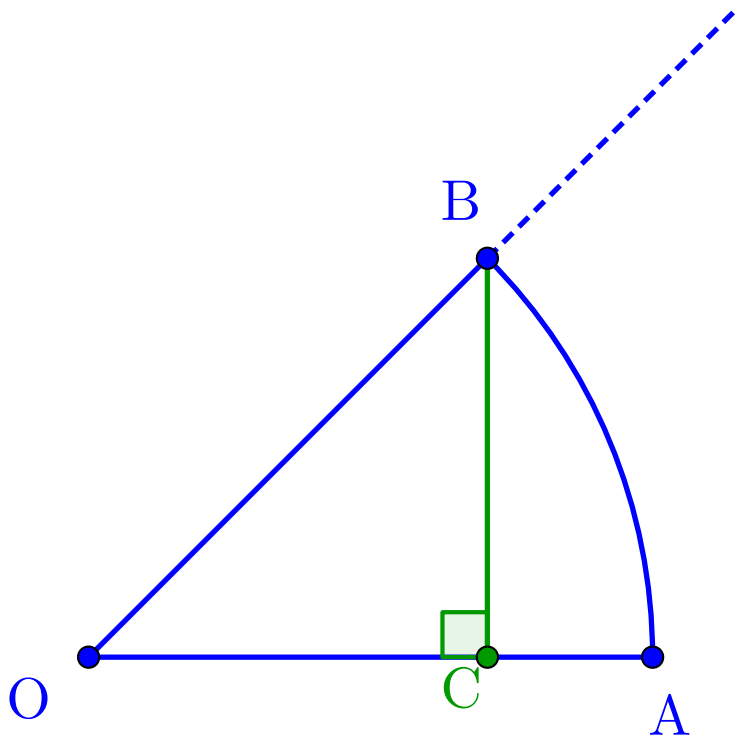

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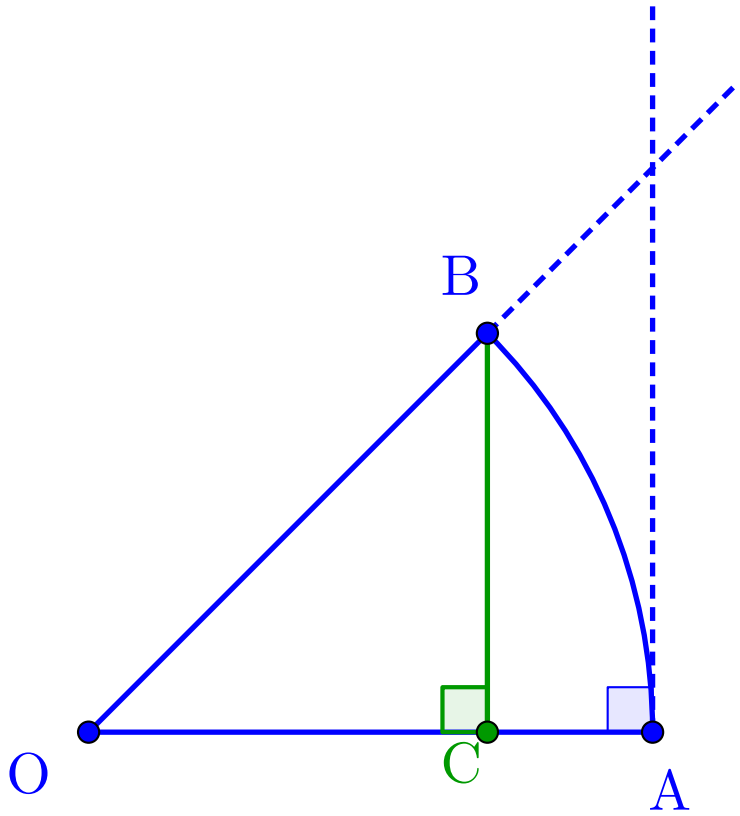

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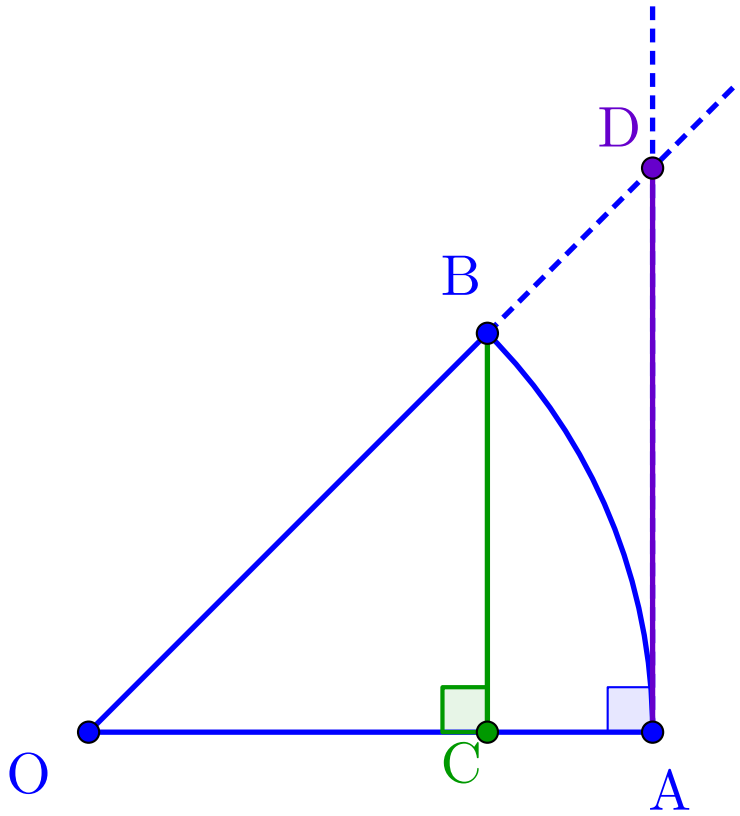

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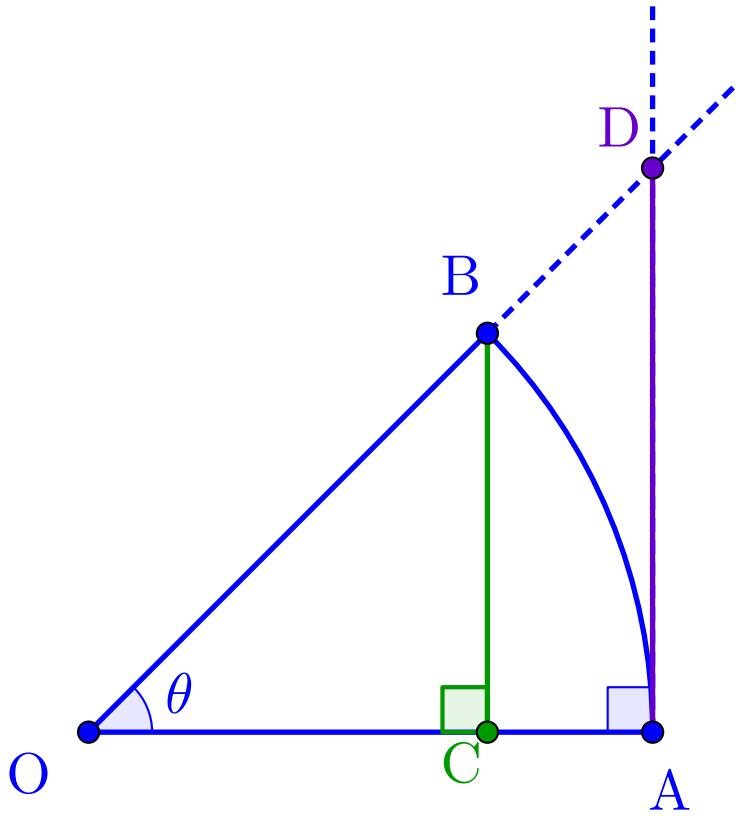

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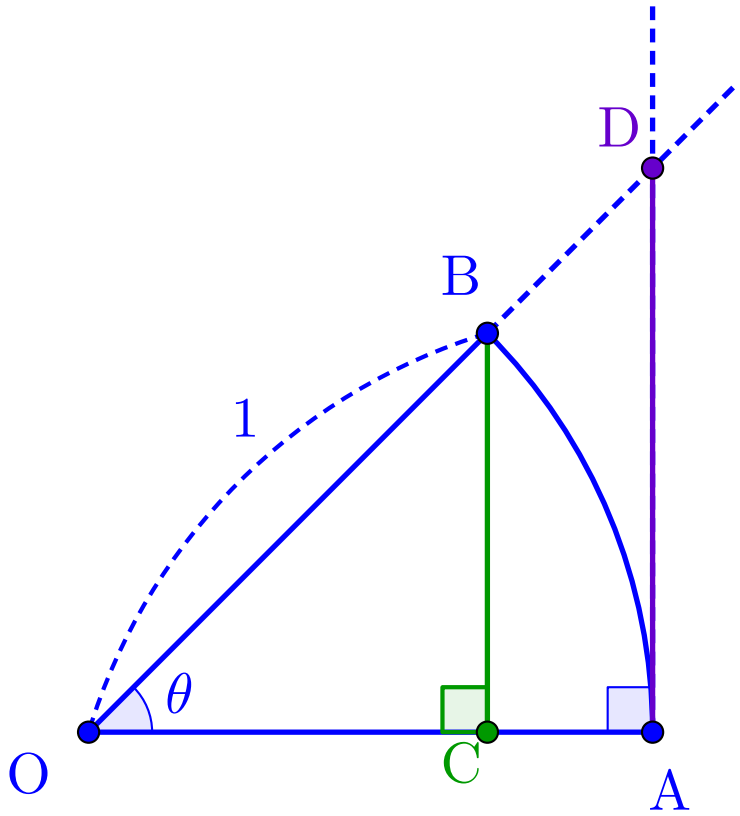

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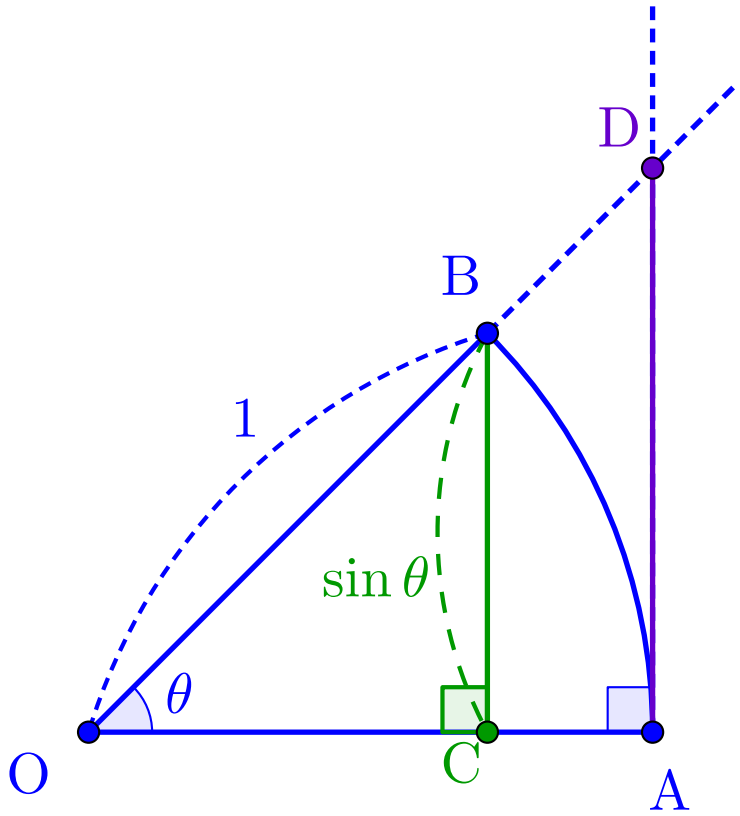

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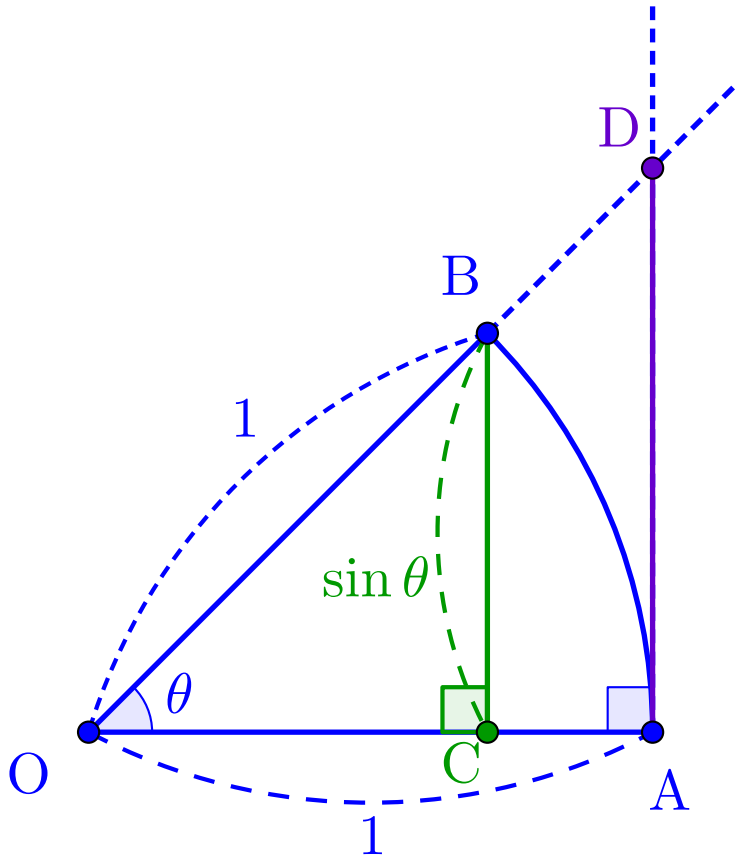

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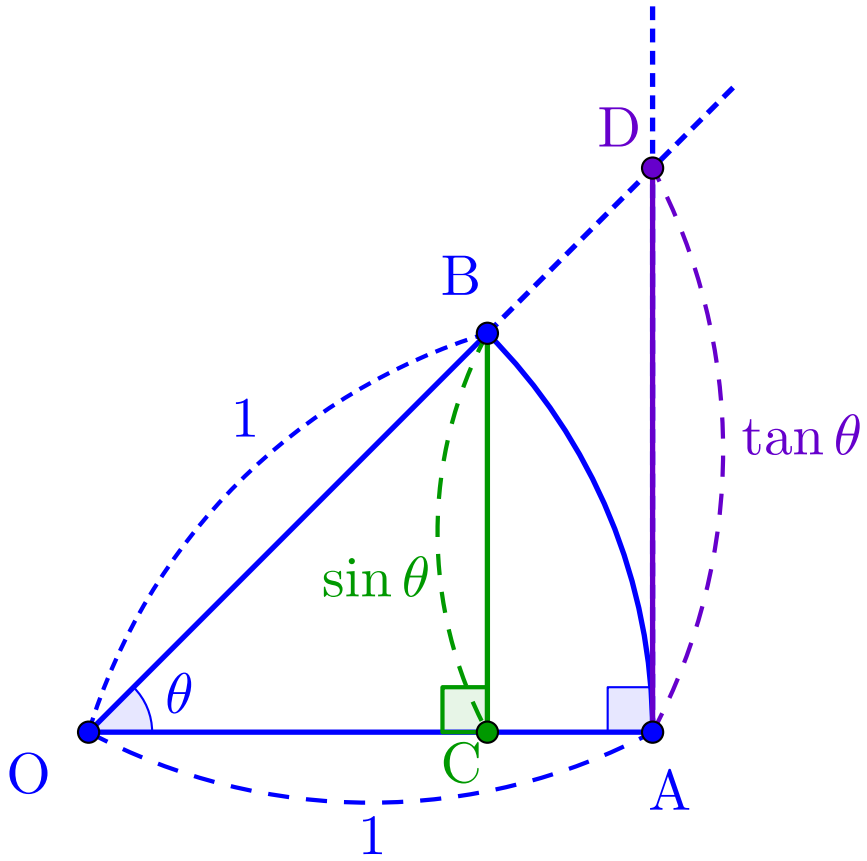

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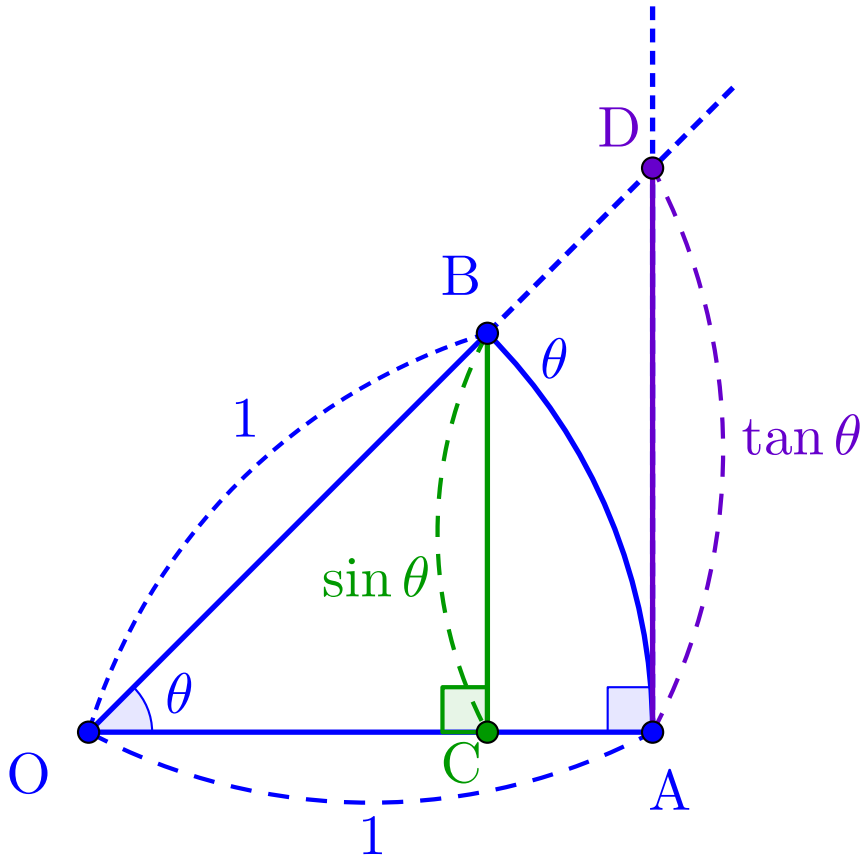

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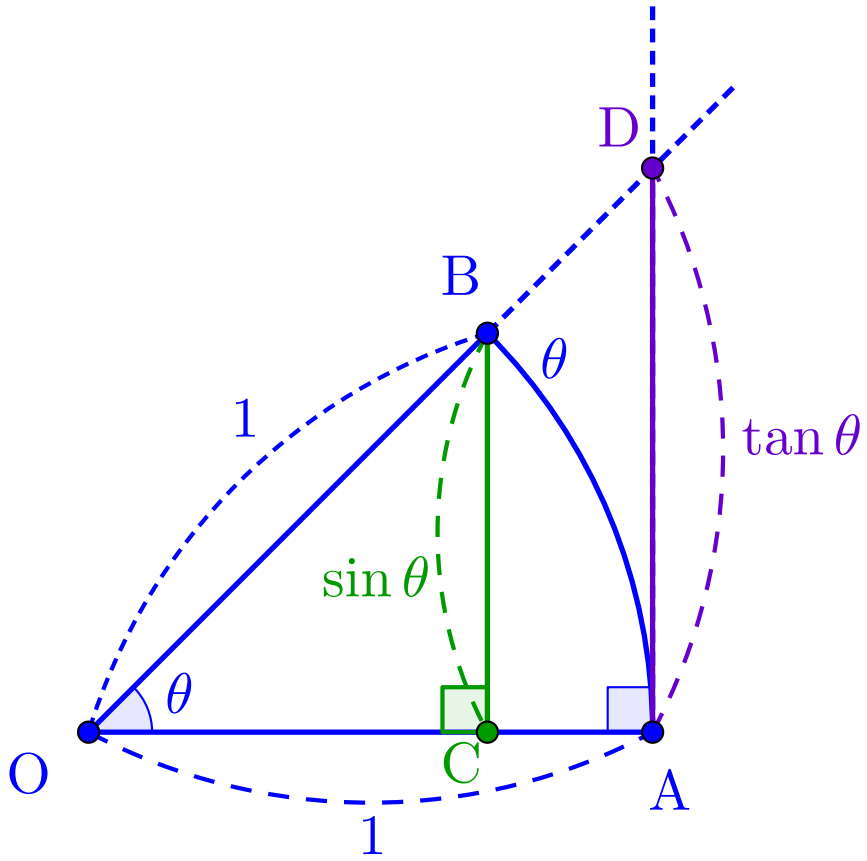
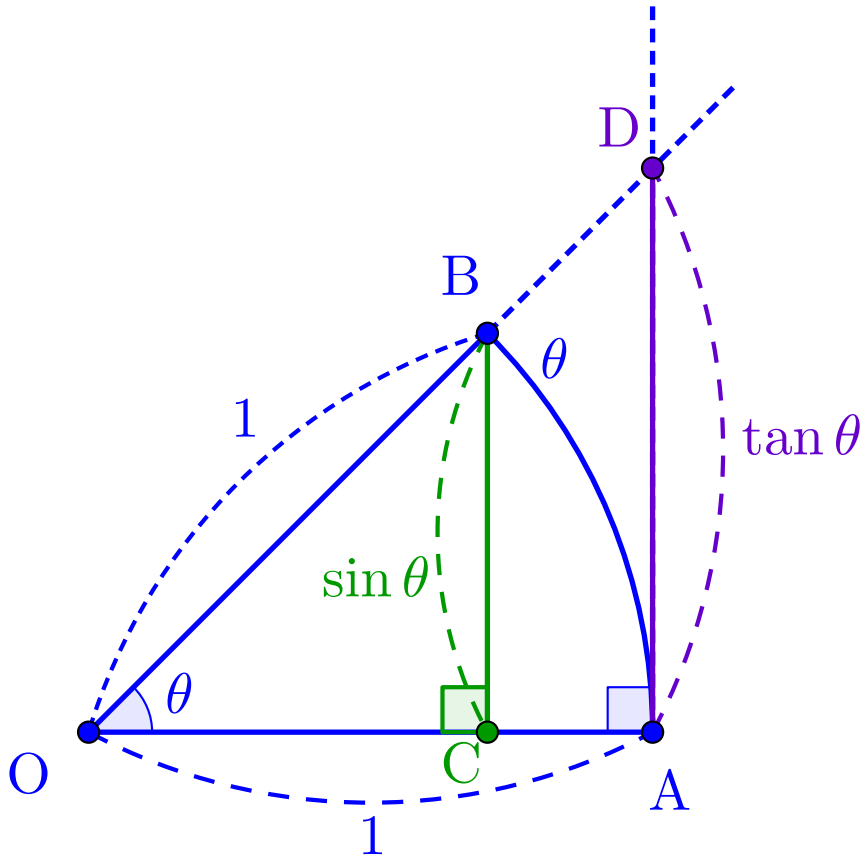


$\overline{\mathrm{BC}} < \mathrm{arc\,AB}$

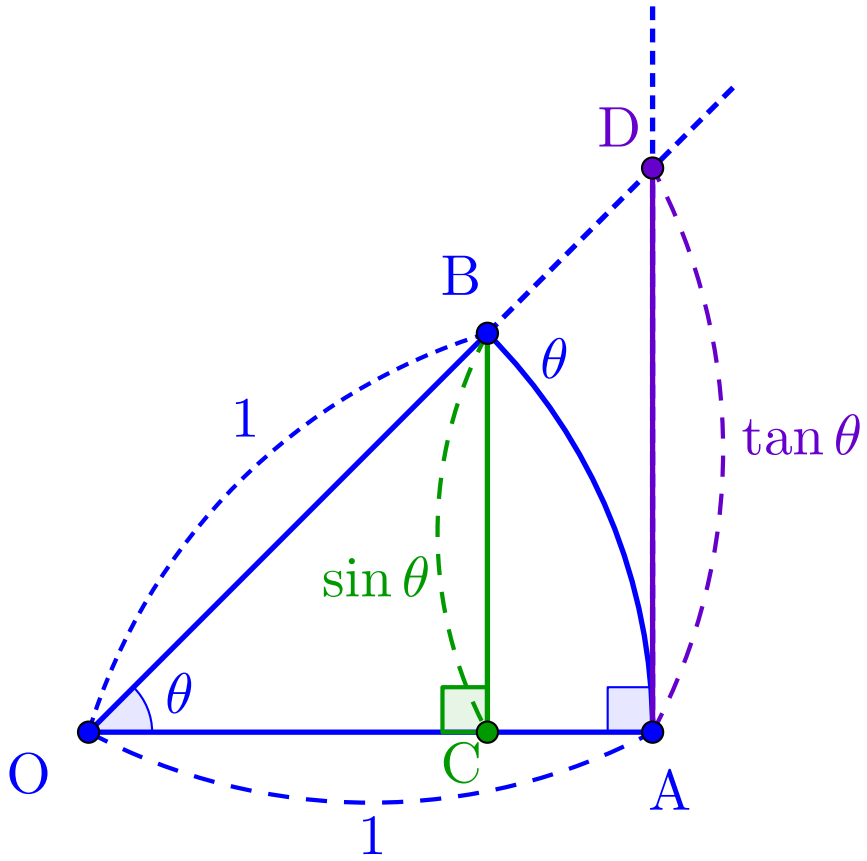
Start End



$\overline{\mathrm{BC}} < \mathrm{arc\,AB}$

$\sin\theta < \theta$

Start End

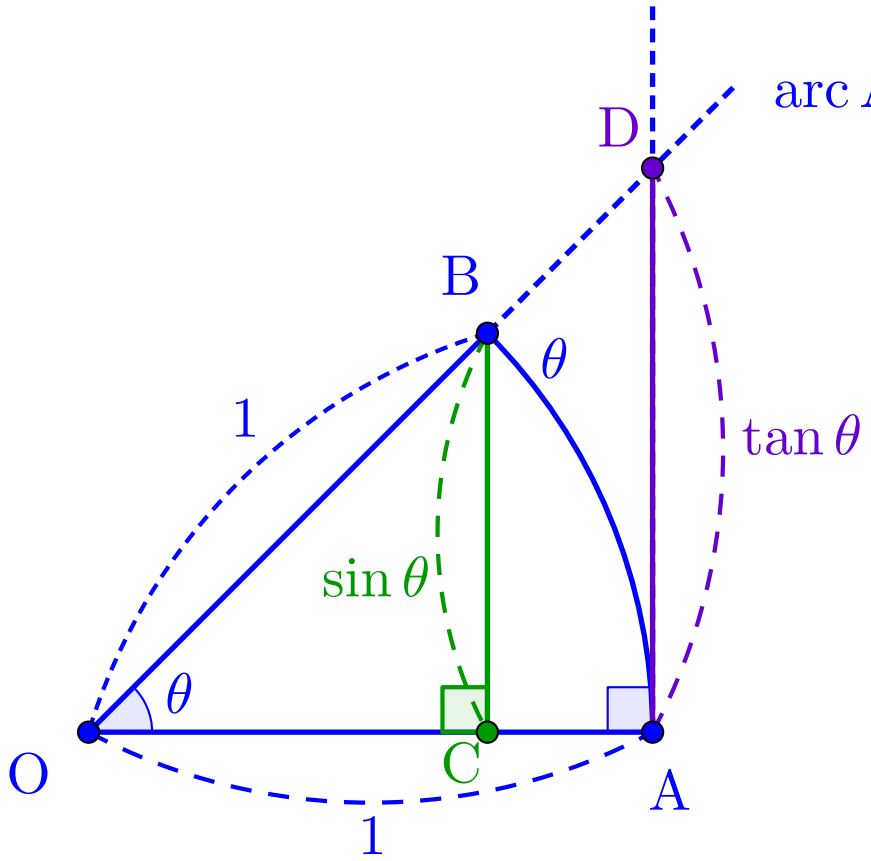


$$\overline{BC} < \text{arc AB}$$

$$\sin\theta < \theta$$

$$\frac{\sin\theta}{\theta} < 1$$

Start End

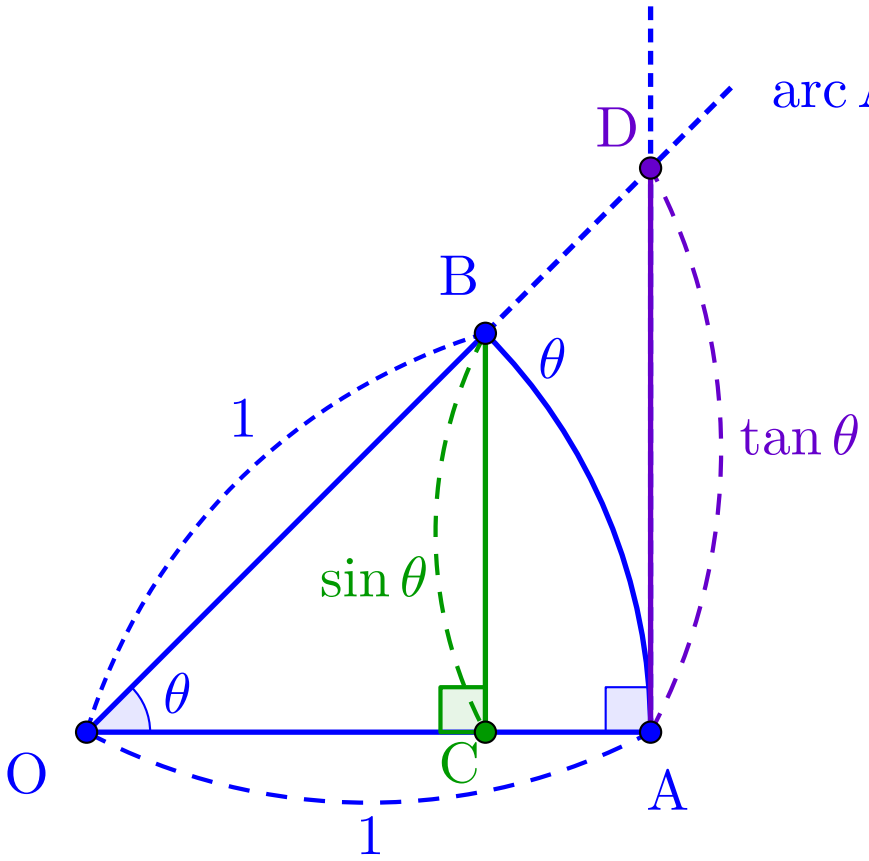


$\text{arc AB} < \overline{\text{AD}}$ $\overline{\text{BC}} < \text{arc AB}$

$\sin\theta < \theta$

$\frac{\sin\theta}{\theta} < 1$

Start End

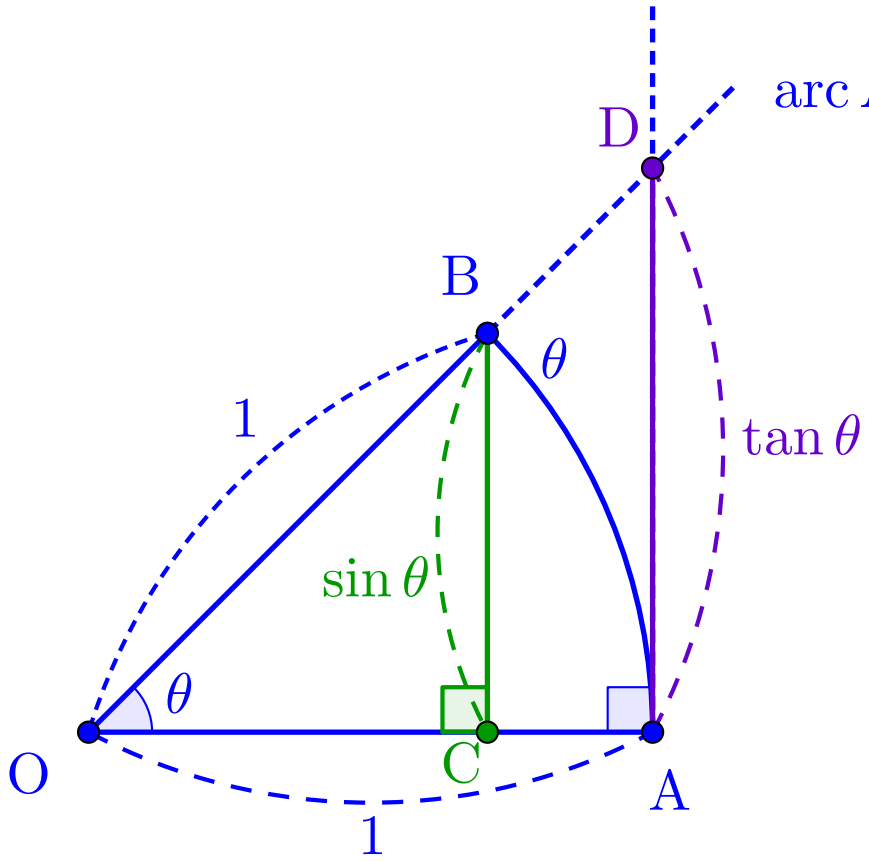


$\text{arc AB} < \overline{\text{AD}}$ $\overline{\text{BC}} < \text{arc AB}$

$\theta < \tan\theta$ $\sin\theta < \theta$

$$\frac{\sin\theta}{\theta} < 1$$

Start End

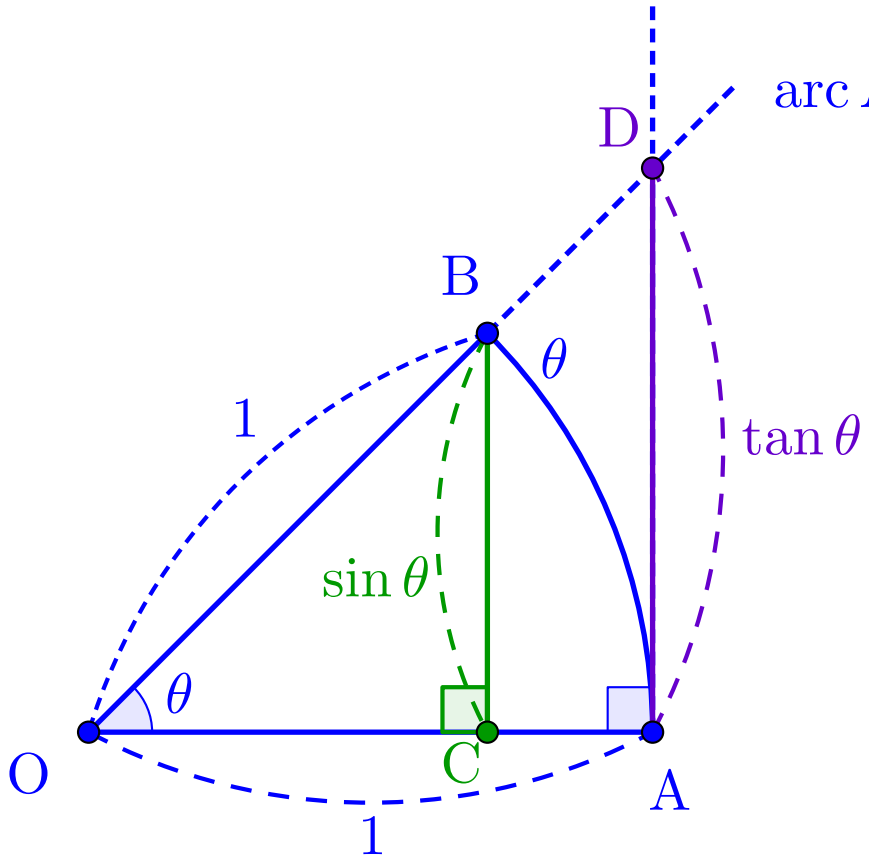


$\text{arc AB} < \overline{\text{AD}} \qquad \overline{\text{BC}} < \text{arc AB}$

$\theta < \tan\theta \qquad \sin\theta < \theta$

$$\cos\theta < \frac{\sin\theta}{\theta} < 1$$

Start End



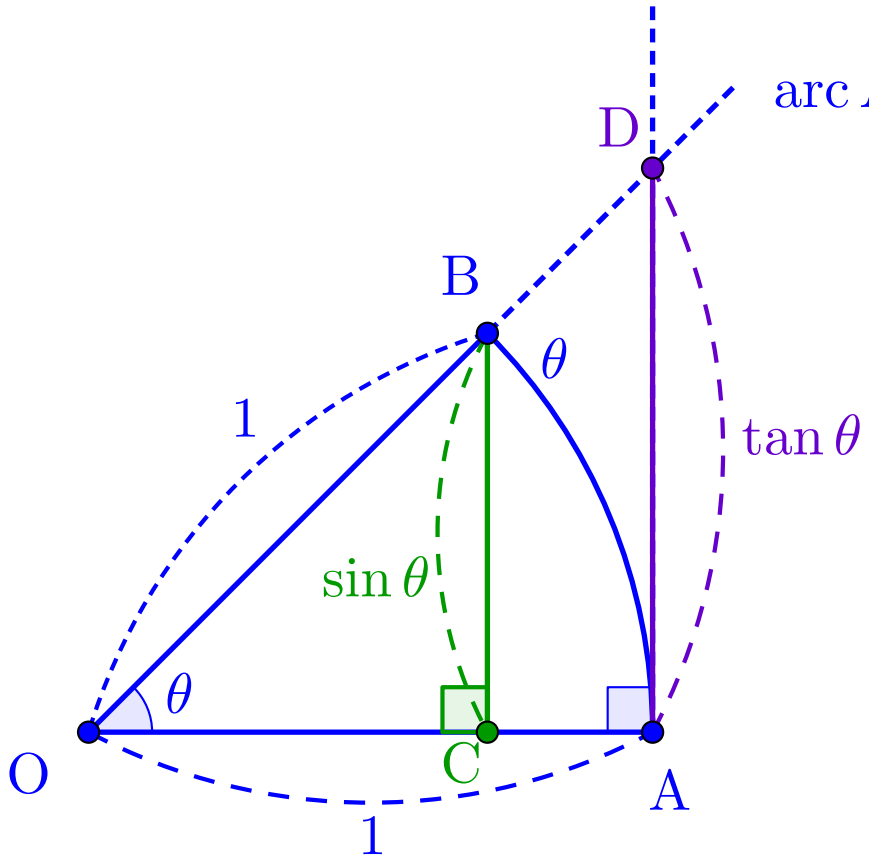
$$\text{arc AB} < \overline{\text{AD}} \qquad \overline{\text{BC}} < \text{arc AB}$$

$$\theta < \tan\theta \qquad \sin\theta < \theta$$

$$\cos\theta < \frac{\sin\theta}{\theta} < 1$$

$$\lim_{\theta \to 0^+} \cos\theta = 1$$

Start End



$$\text{arc AB} < \overline{\text{AD}} \qquad \overline{\text{BC}} < \text{arc AB}$$

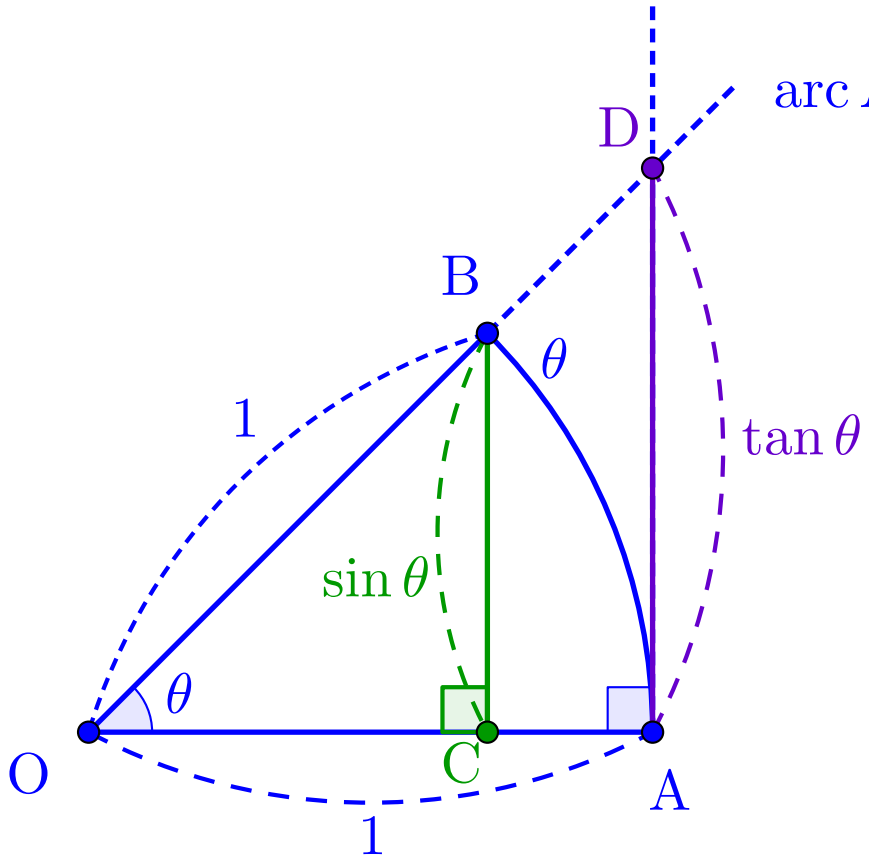
$$\theta < \tan\theta \qquad \sin\theta < \theta$$

$$\cos\theta < \frac{\sin\theta}{\theta} < 1$$

$$\lim_{\theta \to 0^+} \cos\theta = 1$$

$$\lim_{\theta \to 0^+} \frac{\sin\theta}{\theta} = 1$$

Start End



$\text{arc AB} < \overline{\text{AD}} \qquad \overline{\text{BC}} < \text{arc AB}$

$\theta < \tan\theta \qquad \sin\theta < \theta$

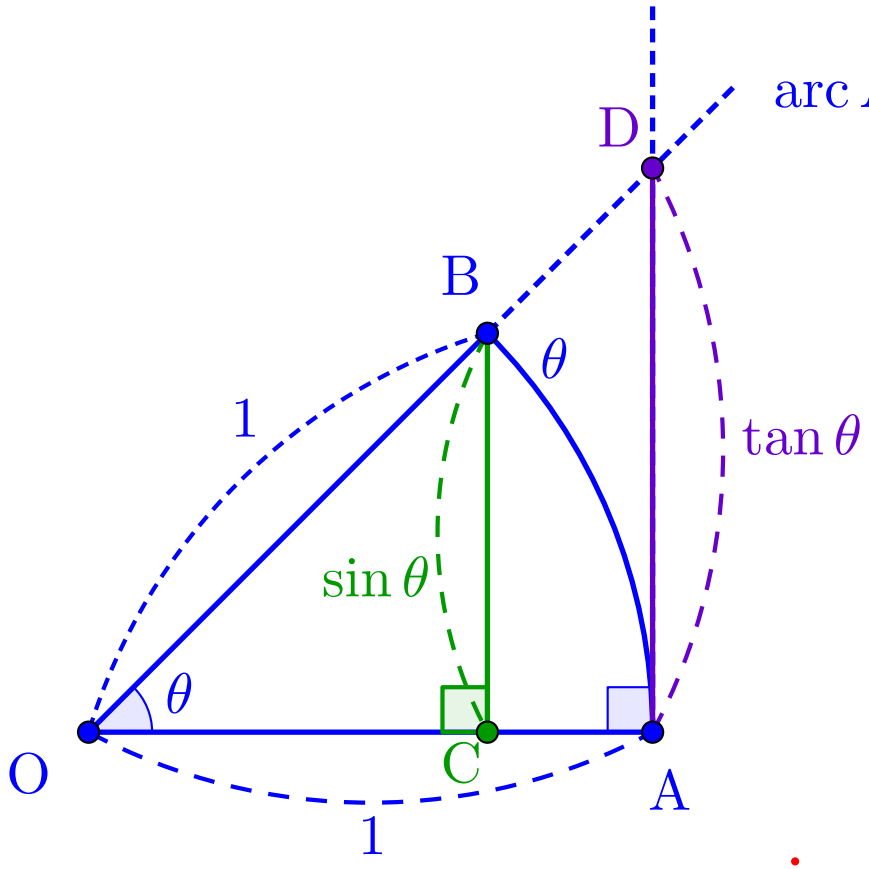
$$\cos\theta < \frac{\sin\theta}{\theta} < 1$$

$$\lim_{\theta \to 0^+} \cos\theta = 1$$

$$\lim_{\theta \to 0^+} \frac{\sin\theta}{\theta} = 1$$

$$(\because \frac{\sin\theta}{\theta} \text{ is even.})$$

Start End



$\text{arc AB} < \overline{\text{AD}} \qquad \overline{\text{BC}} < \text{arc AB}$

$\theta < \tan\theta \qquad \sin\theta < \theta$

$\cos\theta < \frac{\sin\theta}{\theta} < 1$

$\lim_{\theta \to 0^+} \cos\theta = 1$

$\lim_{\theta \to 0^+} \frac{\sin\theta}{\theta} = 1$

$(\because \frac{\sin\theta}{\theta} \text{ is even.})$

$\therefore \lim_{\theta \to 0} \frac{\sin\theta}{\theta} = 1$

Github:
https://min7014.github.io/math20240217001.html

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and you can see a picture moving.