삼각함수의 합성(예각)
(Composition of Trigonometric Functions (Acute Angle))

Composition of Trigonometric Functions (Acute Angle)

Start End

Start End

$$a \sin\theta + b\cos\theta \ (a > 0, \quad b > 0)$$

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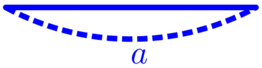
$$a\sin\theta + b\cos\theta \ (a > 0, \ \ b > 0)$$



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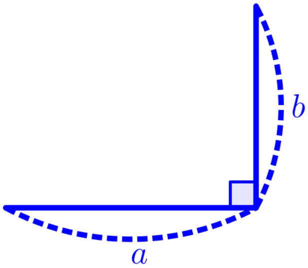

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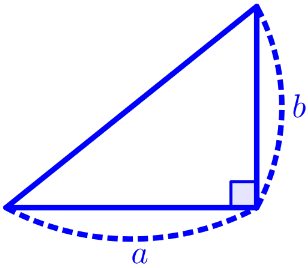

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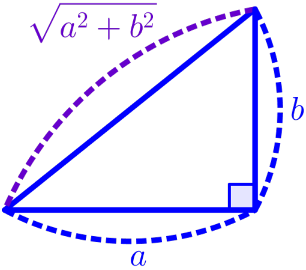
$$a\sin\theta + b\cos\theta \ (a>0, \quad b>0)$$



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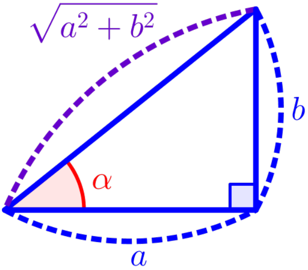

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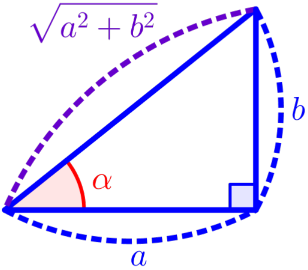
$$a\sin\theta + b\cos\theta \ (a>0,\quad b>0)$$
$$= \sqrt{a^2+b^2}\left(\frac{a}{\sqrt{a^2+b^2}}\sin\theta + \frac{b}{\sqrt{a^2+b^2}}\cos\theta\right)$$



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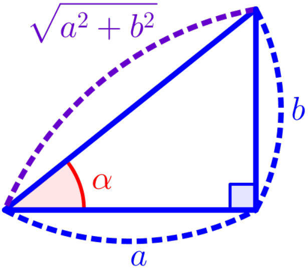

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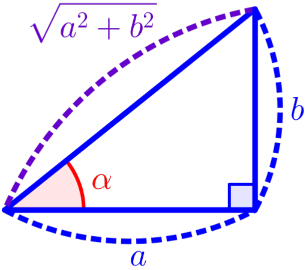

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\end{aligned}
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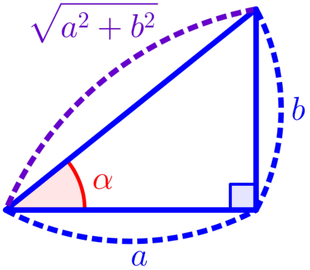

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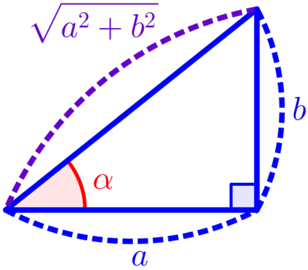

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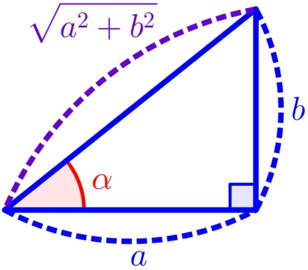

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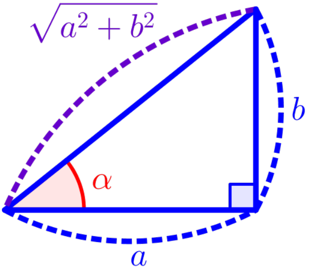

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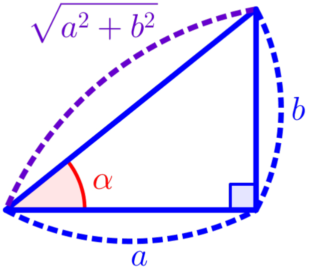

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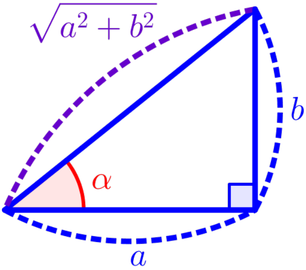

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&= \sqrt{a^2+b^2}\sin(\theta+\alpha)
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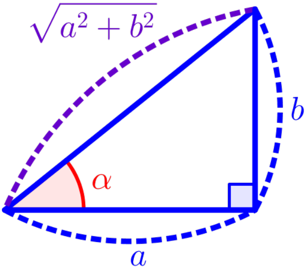

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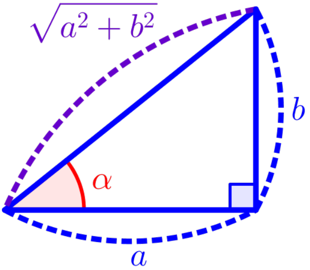

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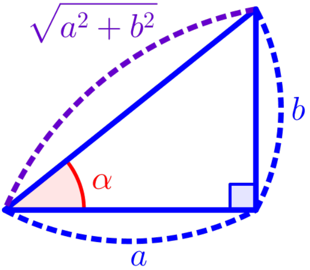

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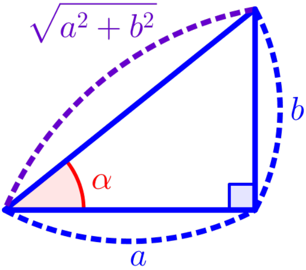

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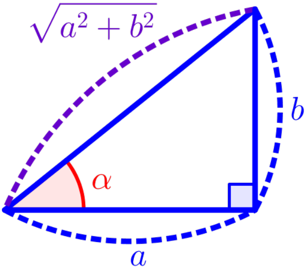

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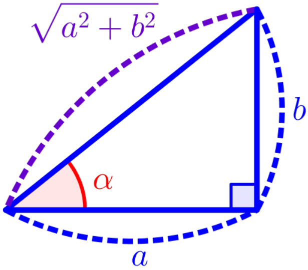

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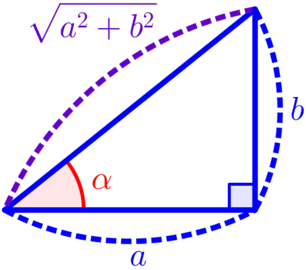

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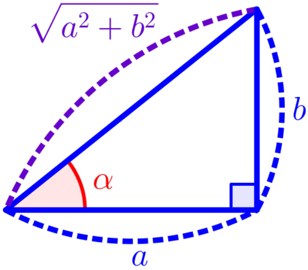

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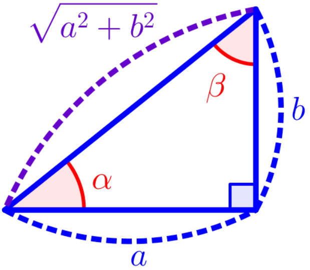

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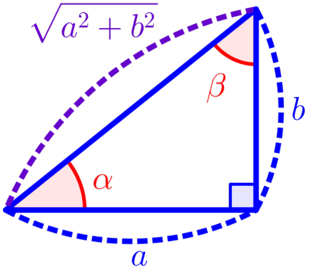

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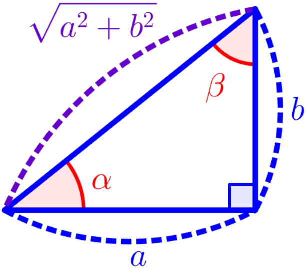
$$= \sqrt{a^2+b^2}\,(\sin\beta$$



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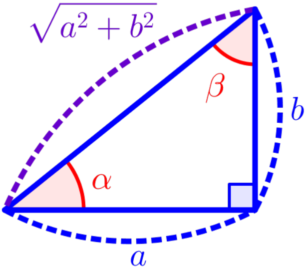

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Start End

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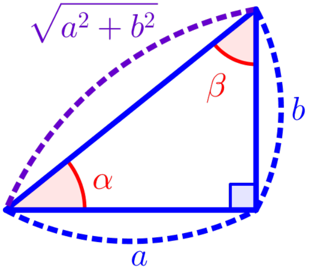

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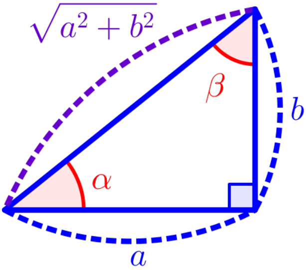
$$a\sin\theta + b\cos\theta \ (a>0,\ \ b>0)$$
$$= \sqrt{a^2+b^2}\left(\frac{a}{\sqrt{a^2+b^2}}\sin\theta + \frac{b}{\sqrt{a^2+b^2}}\cos\theta\right)$$
$$= \sqrt{a^2+b^2}\,(\sin\beta\sin\theta + \cos\beta\cos\theta)$$



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$$
\begin{aligned}
& a\sin\theta + b\cos\theta \ (a>0,\quad b>0) \\
&= \sqrt{a^2+b^2}\left(\frac{a}{\sqrt{a^2+b^2}}\sin\theta + \frac{b}{\sqrt{a^2+b^2}}\cos\theta\right) \\
&= \sqrt{a^2+b^2}\,(\cos\alpha\sin\theta + \sin\alpha\cos\theta) \\
&= \sqrt{a^2+b^2}\,(\sin\theta\cos\alpha + \cos\theta\sin\alpha) \\
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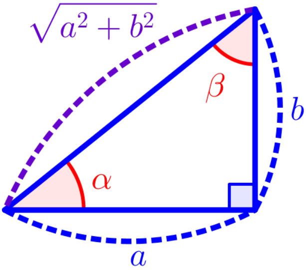
&= \sqrt{a^2+b^2}\,(\cos\theta\cos\beta + \sin\theta\sin\beta)
\end{aligned}
$$



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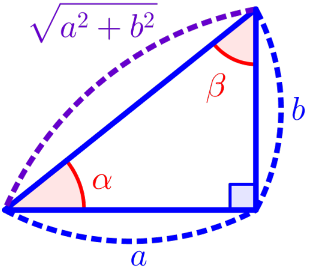

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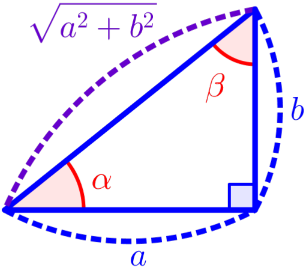
$$



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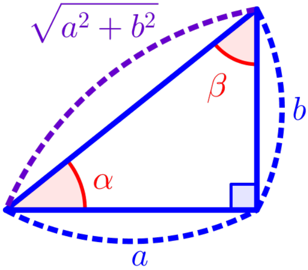

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$$\Big(\cos\beta =$$

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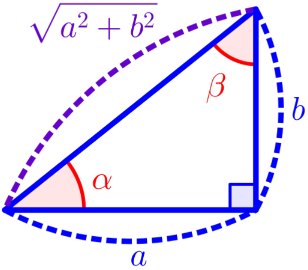

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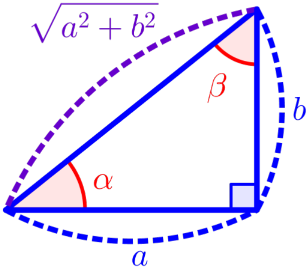

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\end{aligned}
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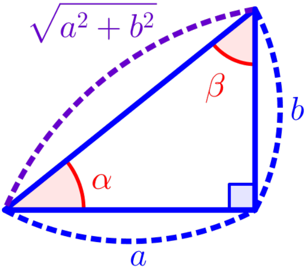

Github:
https://min7014.github.io/math20230417001.html

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