

$$\sqrt{a^2 + b^2} = \sqrt{a^2 + b^2} = 1$$

Let $a = \cos \theta$ and $b = \sin \theta$.

Then

$\sqrt{a^2 + b^2} = \sqrt{\cos^2 \theta + \sin^2 \theta} = \sqrt{1} = 1$.

Thus

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