Arco metade.

Vamos partir de uma simples fórmula que pode ser escrita de duas formas:

$\cos 2\alpha = 2\cos^2\alpha - 1 = 1 - 2\sin^2\alpha$.

Tomando $\theta = 2\alpha$:

$$\cos\theta = 2\cos^2\frac{\theta}{2} - 1 \;\Rightarrow\; \boxed{\cos\frac{\theta}{2} = \pm\sqrt{\frac{\cos\theta + 1}{2}}};$$

$$\cos\theta = 1 - 2\sin^2\frac{\theta}{2} \;\Rightarrow\; \boxed{\sin\frac{\theta}{2} = \pm\sqrt{\frac{1 - \cos\theta}{2}}};$$

$$\boxed{\tan\frac{\theta}{2} = \pm\sqrt{\frac{1 - \cos\theta}{1 + \cos\theta}}};\quad \boxed{\cot\frac{\theta}{2} = \pm\sqrt{\frac{1 + \cos\theta}{1 - \cos\theta}}};$$

$$\boxed{\sec\frac{\theta}{2} = \pm\sqrt{\frac{2}{\cos\theta + 1}}};\quad \boxed{\csc\frac{\theta}{2} = \pm\sqrt{\frac{2}{1 - \cos\theta}}};$$

$$\boxed{cord\;\frac{\theta}{2} = \sqrt{2\left(1 \pm \sqrt{\frac{1 + \cos\theta}{2}}\right)}}.$$

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