

Precalculus

The equation $\cos \theta = b$, special angles

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Example

Find all solutions and then find those that lie between -180° and 180° .

$$\cos \theta = \frac{\sqrt{2}}{2}$$

$$\theta = 45^\circ + k \cdot 360^\circ = \dots - 675^\circ, -315^\circ, 45^\circ, 405^\circ, \dots$$

or

$$\dots \quad k=-2 \quad k=-1 \quad k=0 \quad k=1 \quad \dots$$

$$-45^\circ + k \cdot 360^\circ = \dots - 765^\circ, -405^\circ, -45^\circ, 315^\circ, \dots$$

$$\theta = \quad \quad \quad \cancel{. . . - 675^\circ, - 315^\circ, 45^\circ, 405^\circ, . . .}$$

$$\quad \quad \quad \cancel{. . . - 765^\circ, - 405^\circ, - 45^\circ, 315^\circ, . . .}$$

