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

Todor Milev

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Example

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

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

$\theta = 45° + k \cdot 360° = \quad \dots -675°, \; -315°, \quad 45°, \quad 405°, \; \dots$

   or $\qquad\qquad\qquad\quad \cdots \quad {\scriptstyle k=-2} \quad\; {\scriptstyle k=-1} \qquad {\scriptstyle k=0} \quad\; {\scriptstyle k=1} \quad \cdots$

$\quad\; -45° + k \cdot 360° = \dots -765°, \; -405°, \; -45°, \; 315°, \; \dots$

$\theta = \qquad\qquad\qquad\qquad \cancel{\;} \; \cancel{-675°}, \; \cancel{-315°}, \quad 45°, \quad \cancel{405°}, \; \cancel{\;}$

$\qquad\qquad\qquad\qquad\qquad\quad \cancel{\;} \; \cancel{-765°}, \; \cancel{-405°}, \; -45°, \; \cancel{315°}, \; \cancel{\;}$