1.2.3   Einige Rechenregeln

Sinus   **Kosinus**

$$\sin(2\pi \cdot n + \alpha) \quad = \quad \sin(\alpha) \qquad\qquad \cos(2\pi \cdot n + \alpha) \quad = \quad \cos(\alpha)$$

$$\sin(-\alpha) \quad\quad = \quad -\sin(\alpha) \qquad\qquad \cos(-\alpha) \quad\quad = \quad \cos(\alpha)$$

$$\sin\left(\frac{\pi}{2} \pm \alpha\right) \quad = \quad \cos(\alpha) \qquad\qquad \cos\left(\frac{\pi}{2} \pm \alpha\right) \quad = \quad \mp\sin(\alpha)$$

$$\sin(\pi \pm \alpha) \quad\quad = \quad \mp\sin(\alpha) \qquad\qquad \cos(\pi \pm \alpha) \quad\quad = \quad -\cos(\alpha)$$

$$\sin\left(\frac{3\pi}{2} \pm \alpha\right) \quad = \quad -\cos(\alpha) \qquad\qquad \cos\left(\frac{3\pi}{2} \pm \alpha\right) \quad = \quad \pm\sin(\alpha)$$

$$\sin(2\pi - \alpha) \quad = \quad -\sin(\alpha) \qquad\qquad \cos(2\pi - \alpha) \quad = \quad \cos(\alpha)$$

Sinus und Kosinus

$$\sin(\alpha)^2 + \cos(\alpha)^2 = 1 \qquad\qquad\qquad\qquad \text{(Pythagoras am Einheitskreis)}$$

$$\sin(\alpha \pm \beta) = \sin(\alpha)\cos(\beta) \pm \cos(\alpha)\sin(\beta) \qquad\qquad \text{(Additionstheoreme)}$$

Wichtige Winkel

$$\sin(0) \;=\; \sin(0°) \;=\; 0 \;=\; \cos(90°) \;=\; \cos\left(\frac{\pi}{2}\right) \qquad = \frac{1}{2}\sqrt{0}$$

$$\sin\left(\frac{\pi}{6}\right) \;=\; \sin(30°) \;=\; \frac{1}{2} \;=\; \cos(60°) \;=\; \cos\left(\frac{\pi}{3}\right) \qquad = \frac{1}{2}\sqrt{1}$$

$$\sin\left(\frac{\pi}{4}\right) \;=\; \sin(45°) \;=\; \frac{1}{2}\sqrt{2} \;=\; \cos(45°) \;=\; \cos\left(\frac{\pi}{4}\right) \qquad = \frac{1}{2}\sqrt{2}$$

$$\sin\left(\frac{\pi}{3}\right) \;=\; \sin(60°) \;=\; \frac{1}{2}\sqrt{3} \;=\; \cos(30°) \;=\; \cos\left(\frac{\pi}{6}\right) \qquad = \frac{1}{2}\sqrt{3}$$

$$\sin\left(\frac{\pi}{2}\right) \;=\; \sin(90°) \;=\; 1 \;=\; \cos(0°) \;=\; \cos(0) \qquad = \frac{1}{2}\sqrt{4}$$