

4. Anwendung der Additionstheoreme für Sinus und Cosinus ergibt

$$\begin{aligned}\sin((x+y)+z) &= \sin(x+y)\cos(z) + \cos(x+y)\sin(z) \\ &= (\sin(x)\cos(y) + \cos(x)\sin(y))\cos(z) + \\ &\quad (\cos(x)\cos(y) - \sin(x)\sin(y))\sin(z) \\ &= \sin(x)\cos(y)\cos(z) + \cos(x)\sin(y)\cos(z) + \\ &\quad \cos(x)\cos(y)\sin(z) - \sin(x)\sin(y)\sin(z).\end{aligned}$$