3°の倍数角の三角比

度	sin	tan
0°	0	0
3°	$\dfrac{-(1+\sqrt{3})(1-\sqrt{5})+\sqrt{2}(1-\sqrt{3})\sqrt{5+\sqrt{5}}}{8\sqrt{2}}$	$\dfrac{-\sqrt{2}(\sqrt{2}-\sqrt{5-\sqrt{5}})}{1+2\sqrt{3}+\sqrt{5}}$
6°	$\dfrac{-(1+\sqrt{5})+\sqrt{6}\sqrt{5-\sqrt{5}}}{8}$	$\dfrac{-\sqrt{2}(\sqrt{6}-\sqrt{5+\sqrt{5}})}{1+\sqrt{5}}$
9°	$\dfrac{1+\sqrt{5}-\sqrt{2}\sqrt{5-\sqrt{5}}}{4\sqrt{2}}$	$1+\sqrt{5}-\sqrt{5+2\sqrt{5}}=\dfrac{-\sqrt{2}(2\sqrt{2}-\sqrt{5+\sqrt{5}})}{1-\sqrt{5}}$
12°	$\dfrac{\sqrt{3}(1-\sqrt{5})+\sqrt{2}\sqrt{5+\sqrt{5}}}{8}$	$\dfrac{\sqrt{2}(\sqrt{6}-\sqrt{5-\sqrt{5}})}{3+\sqrt{5}}$
15°	$\dfrac{-(1-\sqrt{3})}{2\sqrt{2}}$	$2-\sqrt{3}$
18°	$\dfrac{-(1-\sqrt{5})}{4}$	$\dfrac{\sqrt{5-2\sqrt{5}}}{\sqrt{5}}=\dfrac{\sqrt{2}\sqrt{5-\sqrt{5}}}{\sqrt{5}(1+\sqrt{5})}$
21°	$\dfrac{(1-\sqrt{3})(1+\sqrt{5})+\sqrt{2}(1+\sqrt{3})\sqrt{5-\sqrt{5}}}{8\sqrt{2}}$	$\dfrac{\sqrt{2}(\sqrt{2}-\sqrt{5+\sqrt{5}})}{1-2\sqrt{3}-\sqrt{5}}$
24°	$\dfrac{\sqrt{3}(1+\sqrt{5})-\sqrt{2}\sqrt{5-\sqrt{5}}}{8}$	$\dfrac{-\sqrt{2}(\sqrt{6}-\sqrt{5+\sqrt{5}})}{3-\sqrt{5}}$
27°	$\dfrac{1-\sqrt{5}+\sqrt{2}\sqrt{5+\sqrt{5}}}{4\sqrt{2}}$	$-(1-\sqrt{5})-\sqrt{5-2\sqrt{5}}=\dfrac{\sqrt{2}(2\sqrt{2}-\sqrt{5-\sqrt{5}})}{1+\sqrt{5}}$
30°	$\dfrac{1}{2}$	$\dfrac{1}{\sqrt{3}}$
33°	$\dfrac{-(1+\sqrt{3})(1-\sqrt{5})-\sqrt{2}(1-\sqrt{3})\sqrt{5+\sqrt{5}}}{8\sqrt{2}}$	$\dfrac{\sqrt{2}(\sqrt{2}+\sqrt{5-\sqrt{5}})}{1+2\sqrt{3}+\sqrt{5}}$
36°	$\dfrac{\sqrt{5-\sqrt{5}}}{2\sqrt{2}}$	$\sqrt{5-2\sqrt{5}}=\dfrac{\sqrt{2}\sqrt{5-\sqrt{5}}}{1+\sqrt{5}}$
39°	$\dfrac{(1+\sqrt{3})(1+\sqrt{5})+\sqrt{2}(1-\sqrt{3})\sqrt{5-\sqrt{5}}}{8\sqrt{2}}$	$\dfrac{-\sqrt{2}(\sqrt{2}-\sqrt{5+\sqrt{5}})}{1+2\sqrt{3}-\sqrt{5}}$
42°	$\dfrac{1-\sqrt{5}+\sqrt{6}\sqrt{5+\sqrt{5}}}{8}$	$\dfrac{-\sqrt{2}(\sqrt{6}-\sqrt{5-\sqrt{5}})}{1-\sqrt{5}}$
45°	$\dfrac{1}{\sqrt{2}}$	1

度	sin	tan
45°	$\dfrac{1}{\sqrt{2}}$	1
48°	$\dfrac{-\sqrt{3}(1-\sqrt{5})+\sqrt{2}\sqrt{5+\sqrt{5}}}{8}$	$\dfrac{\sqrt{2}(\sqrt{6}+\sqrt{5-\sqrt{5}})}{3+\sqrt{5}}$
51°	$\dfrac{-(1-\sqrt{3})(1+\sqrt{5})+\sqrt{2}(1+\sqrt{3})\sqrt{5-\sqrt{5}}}{8\sqrt{2}}$	$\dfrac{-\sqrt{2}(\sqrt{2}+\sqrt{5+\sqrt{5}})}{1-2\sqrt{3}-\sqrt{5}}$
54°	$\dfrac{1+\sqrt{5}}{4}$	$\dfrac{\sqrt{5+2\sqrt{5}}}{\sqrt{5}}=\dfrac{-\sqrt{2}\sqrt{5+\sqrt{5}}}{\sqrt{5}(1-\sqrt{5})}$
57°	$\dfrac{-(1-\sqrt{3})(1-\sqrt{5})+\sqrt{2}(1+\sqrt{3})\sqrt{5+\sqrt{5}}}{8\sqrt{2}}$	$\dfrac{\sqrt{2}(\sqrt{2}-\sqrt{5-\sqrt{5}})}{1-2\sqrt{3}+\sqrt{5}}$
60°	$\dfrac{\sqrt{3}}{2}$	$\sqrt{3}$
63°	$\dfrac{-(1-\sqrt{5})+\sqrt{2}\sqrt{5+\sqrt{5}}}{4\sqrt{2}}$	$-(1-\sqrt{5})+\sqrt{5-2\sqrt{5}}=\dfrac{\sqrt{2}(2\sqrt{2}+\sqrt{5-\sqrt{5}})}{1+\sqrt{5}}$
66°	$\dfrac{1+\sqrt{5}+\sqrt{6}\sqrt{5-\sqrt{5}}}{8}$	$\dfrac{\sqrt{2}(\sqrt{6}+\sqrt{5+\sqrt{5}})}{1+\sqrt{5}}$
69°	$\dfrac{(1+\sqrt{3})(1+\sqrt{5})-\sqrt{2}(1-\sqrt{3})\sqrt{5-\sqrt{5}}}{8\sqrt{2}}$	$\dfrac{\sqrt{2}(\sqrt{2}+\sqrt{5+\sqrt{5}})}{1+2\sqrt{3}-\sqrt{5}}$
72°	$\dfrac{\sqrt{5+\sqrt{5}}}{2\sqrt{2}}$	$\sqrt{5+2\sqrt{5}}=\dfrac{-\sqrt{2}\sqrt{5+\sqrt{5}}}{1-\sqrt{5}}$
75°	$\dfrac{1+\sqrt{3}}{2\sqrt{2}}$	$2+\sqrt{3}$
78°	$\dfrac{-(1-\sqrt{5})+\sqrt{6}\sqrt{5+\sqrt{5}}}{8}$	$\dfrac{-\sqrt{2}(\sqrt{6}+\sqrt{5-\sqrt{5}})}{1-\sqrt{5}}$
81°	$\dfrac{1+\sqrt{5}+\sqrt{2}\sqrt{5-\sqrt{5}}}{4\sqrt{2}}$	$1+\sqrt{5}+\sqrt{5+2\sqrt{5}}=\dfrac{-\sqrt{2}(2\sqrt{2}+\sqrt{5+\sqrt{5}})}{1-\sqrt{5}}$
84°	$\dfrac{\sqrt{3}(1+\sqrt{5})+\sqrt{2}\sqrt{5-\sqrt{5}}}{8}$	$\dfrac{\sqrt{2}(\sqrt{6}+\sqrt{5+\sqrt{5}})}{3-\sqrt{5}}$
87°	$\dfrac{(1-\sqrt{3})(1-\sqrt{5})+\sqrt{2}(1+\sqrt{3})\sqrt{5+\sqrt{5}}}{8\sqrt{2}}$	$\dfrac{-\sqrt{2}(\sqrt{2}+\sqrt{5-\sqrt{5}})}{1-2\sqrt{3}+\sqrt{5}}$
90°	1	$-$

$$2\sqrt{5+\sqrt{5}}=(1+\sqrt{5})\sqrt{5-\sqrt{5}}$$
$$2\sqrt{5-\sqrt{5}}=-(1-\sqrt{5})\sqrt{5+\sqrt{5}}$$
$$2\sqrt{2}\sqrt{5+2\sqrt{5}}=(3+\sqrt{5})\sqrt{5-\sqrt{5}}$$
$$2\sqrt{2}\sqrt{5-2\sqrt{5}}=(3-\sqrt{5})\sqrt{5+\sqrt{5}}$$

$$2(1+2\sqrt{3}+\sqrt{5})=-(1+\sqrt{3})(1-\sqrt{5})(\sqrt{3}+\sqrt{5})$$
$$2(1+2\sqrt{3}-\sqrt{5})=-(1+\sqrt{3})(1+\sqrt{5})(\sqrt{3}-\sqrt{5})$$
$$2(1-2\sqrt{3}+\sqrt{5})=(1-\sqrt{3})(1-\sqrt{5})(\sqrt{3}-\sqrt{5})$$
$$2(1-2\sqrt{3}-\sqrt{5})=(1-\sqrt{3})(1+\sqrt{5})(\sqrt{3}+\sqrt{5})$$