# LÜK – WINKELFUNKTIONEN 5

Nur eine der Winkelfunktionen ist jeweils richtig angegeben!
Finde diese und du erhältst das Lösungsbild.
*Ziel: Richtiges Erkennen der Winkelfunktionen im rechtwinkeligen Dreieck.*

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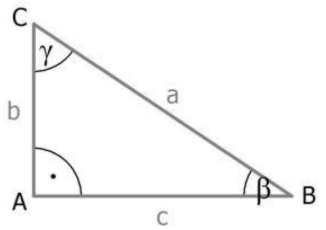
**1**




| | | |
|---|---|---|
| $\sin(\beta)=\frac{a}{b}$ ❺ | $\tan(\gamma)=\frac{b}{c}$ ❶ | $\cos(\beta)=\frac{c}{b}$ ❿ |
| $\cos(\gamma)=\frac{b}{c}$ ❻ | $\sin(\gamma)=\frac{c}{b}$ ⓫ | $\tan(\beta)=\frac{b}{c}$ ❷ |

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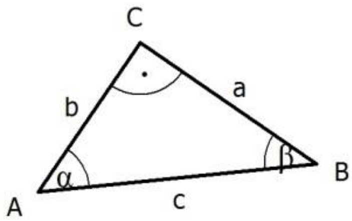
**2**




| | | |
|---|---|---|
| $\cos(\alpha)=\frac{c}{b}$ ⓬ | $\sin(\alpha)=\frac{a}{c}$ ❸ | $\tan(\alpha)=\frac{b}{c}$ ❽ |
| $\tan(\beta)=\frac{b}{c}$ ⓫ | $\cos(\beta)=\frac{a}{b}$ ❾ | $\sin(\beta)=\frac{a}{c}$ ❹ |

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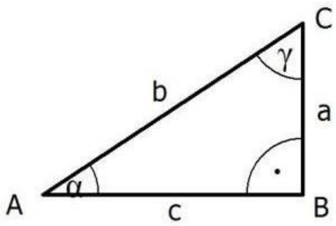
**3**




| | | |
|---|---|---|
| $\tan(\alpha)=\frac{a}{c}$ ❺ | $\sin(\alpha)=\frac{a}{c}$ ❻ | $\cos(\alpha)=\frac{b}{c}$ ❹ |
| $\sin(\gamma)=\frac{c}{b}$ ❽ | $\cos(\gamma)=\frac{b}{c}$ ❷ | $\tan(\gamma)=\frac{b}{a}$ ❿ |

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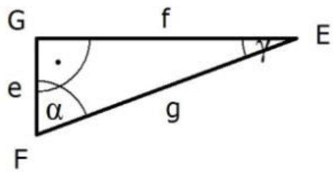
**4**




| | | |
|---|---|---|
| $\sin(\alpha)=\frac{e}{g}$ ⓬ | $\tan(\alpha)=\frac{e}{f}$ ❸ | $\sin(\gamma)=\frac{f}{g}$ ❾ |
| $\tan(\gamma)=\frac{e}{g}$ ❼ | $\cos(\gamma)=\frac{f}{g}$ ❶ | $\cos(\alpha)=\frac{f}{e}$ ❺ |

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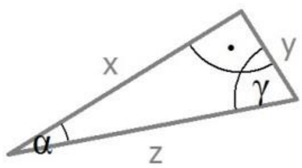
**5**




| | | |
|---|---|---|
| $\tan(\gamma)=\frac{y}{x}$ ❶ | $\cos(\gamma)=\frac{x}{z}$ ⓫ | $\sin(\alpha)=\frac{x}{z}$ ❹ |
| $\sin(\gamma)=\frac{x}{z}$ ⓬ | $\tan(\alpha)=\frac{x}{y}$ ❸ | $\cos(\alpha)=\frac{z}{x}$ ❼ |

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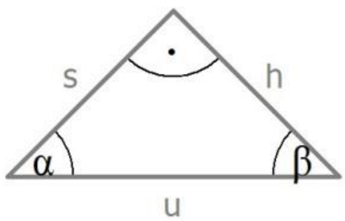
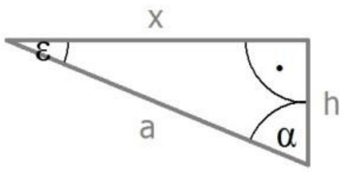
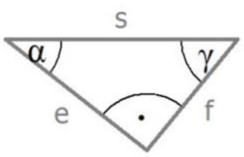
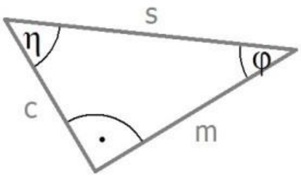
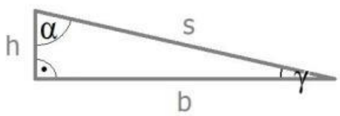
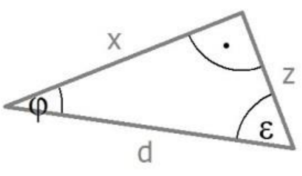
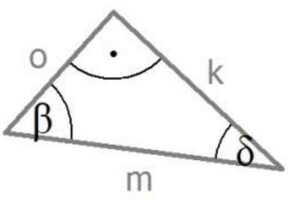
**6**




| | | |
|---|---|---|
| $\sin(\beta)=\frac{s}{h}$ ❷ | $\cos(\alpha)=\frac{s}{h}$ ❺ | $\sin(\alpha)=\frac{h}{u}$ ❹ |
| $\tan(\alpha)=\frac{h}{u}$ ❿ | $\cos(\beta)=\frac{h}{s}$ ❶ | $\tan(\beta)=\frac{s}{u}$ ❽ |

| | | | | |
|---|---|---|---|---|
| 7 |  | | | |
| | | $\tan(\varepsilon)=\frac{h}{a}$ ❷ | $\cos(\varepsilon)=\frac{a}{x}$ ❻ | $\cos(\alpha)=\frac{x}{h}$ ❸ |
| | | $\sin(\varepsilon)=\frac{h}{x}$ ❾ | $\sin(\alpha)=\frac{x}{a}$ ❽ | $\tan(\alpha)=\frac{h}{x}$ ❼ |
| 8 |  | | | |
| | | $\sin(\alpha)=\frac{f}{e}$ ❶ | $\tan(\alpha)=\frac{f}{s}$ ⓬ | $\tan(\gamma)=\frac{s}{e}$ ⓫ |
| | | $\cos(\gamma)=\frac{f}{s}$ ❿ | $\sin(\gamma)=\frac{f}{s}$ ❸ | $\cos(\alpha)=\frac{s}{e}$ ❾ |
| 9 |  | | | |
| | | $\cos(\varphi)=\frac{c}{m}$ ❺ | $\tan(\eta)=\frac{c}{m}$ ❽ | $\sin(\eta)=\frac{m}{s}$ ❻ |
| | | $\sin(\varphi)=\frac{c}{m}$ ❿ | $\cos(\eta)=\frac{m}{s}$ ❶ | $\tan(\varphi)=\frac{m}{s}$ ❼ |
| 10 |  | | | |
| | | $\tan(\gamma)=\frac{b}{h}$ ❹ | $\tan(\alpha)=\frac{b}{h}$ ❼ | $\cos(\alpha)=\frac{s}{b}$ ❾ |
| | | $\sin(\alpha)=\frac{h}{s}$ ❻ | $\cos(\gamma)=\frac{h}{b}$ ⓫ | $\sin(\gamma)=\frac{b}{s}$ ⓬ |
| 11 |  | | | |
| | | $\sin(\varphi)=\frac{z}{x}$ ❷ | $\cos(\varepsilon)=\frac{x}{z}$ ❼ | $\tan(\varphi)=\frac{z}{d}$ ❺ |
| | | $\tan(\varepsilon)=\frac{z}{x}$ ❽ | $\sin(\varepsilon)=\frac{x}{z}$ ❹ | $\cos(\varphi)=\frac{x}{d}$ ⓫ |
| 12 |  | | | |
| | | $\sin(\delta)=\frac{k}{m}$ ❸ | $\sin(\beta)=\frac{k}{o}$ ⓬ | $\cos(\delta)=\frac{o}{m}$ ❻ |
| | | $\tan(\beta)=\frac{k}{o}$ ❾ | $\cos(\beta)=\frac{o}{m}$ ❷ | $\tan(\delta)=\frac{k}{o}$ ❿ |