

S 153 Nr 3

a) $f(x) = c \sin(x)$; $P(\frac{\tilde{\pi}}{2} | 2)$

$$f(\frac{\tilde{\pi}}{2}) = c \cdot \sin(\frac{\tilde{\pi}}{2}) = 2 \Rightarrow \underline{\underline{c}} = \frac{2}{\sin(\frac{\tilde{\pi}}{2})} = \frac{2}{1} = \underline{\underline{2}}$$

b) $f(x) = \sin(cx)$, $P(\pi | 1)$

$$f(\pi) = \sin(c \cdot \pi) = 1 \Rightarrow c \cdot \pi = \frac{1}{2} \pi \Rightarrow \underline{\underline{c}} = \underline{\underline{\frac{1}{2}}}$$

c) $f(x) = \sin(x+c)$; $P(1 | 0)$

$$f(1) = \sin(1+c) = 0 \Rightarrow 1+c = 0 \Rightarrow \underline{\underline{c}} = \underline{\underline{-1}}$$

oder $1+c = \tilde{\pi} \Rightarrow \underline{\underline{c}} = \underline{\underline{\tilde{\pi}-1}}$

S 154 Nr. 6

a) Amplitude $a=1$, Periode $p=2 \Rightarrow p = \frac{2\tilde{\pi}}{b} = 2 \Rightarrow b = \tilde{\pi}$

$$\Rightarrow \underline{\underline{f(x)}} = 1 \cdot \sin(bx) = \underline{\underline{1 \sin(\tilde{\pi} \cdot x)}} = \underline{\underline{\sin(\tilde{\pi} x)}}$$

b) Amplitude $a=1$, Periode $p=4$; Verschiebung in y-Richtung

$$p = \frac{2\tilde{\pi}}{b} = 4 \Rightarrow \underline{\underline{b}} = \frac{2\tilde{\pi}}{4} = \underline{\underline{\frac{1}{2} \tilde{\pi}}}$$

$$\underline{\underline{\sin(x)}} = \underline{\underline{1 \sin(\frac{1}{2} \tilde{\pi} \cdot x) + 1}} = \underline{\underline{\sin(\frac{1}{2} \tilde{\pi} x) + 1}}$$

c) Amplitude $a=1$; Periode $p=2,5$; Verschiebung $-\frac{1}{2} LE$
in y-Richtung

$$p = \frac{2\tilde{\pi}}{b} = 2,5 \Rightarrow b = \frac{2\tilde{\pi}}{2,5} = \frac{2\tilde{\pi}}{\frac{5}{2}} = \underline{\underline{\frac{4}{5} \tilde{\pi}}}$$

$$\underline{\underline{f(x)}} = \underline{\underline{\sin(\frac{4}{5} \tilde{\pi} x) - 0,5}}$$