

Nr. 8) orange  $o(x) = 0,5 \cdot \sin(x)$   
 rot  $r(x) = 0,7 \cdot \sin(x - 0,5) + 1$   
 grün  $g(x) = 1 \cdot \sin(x - 1) + 2$   
 blau  $b(x) = 1,2 \cdot \sin(x - 1,5) + 3$

Nr. 10)  $\cos(x) = \sin(x + \frac{\tilde{\pi}}{2})$

$f(x) = a \cdot \cos(x - c) + d = a \cdot \sin(x + \frac{\tilde{\pi}}{2} - c) + d$

Nr. 11) d)  $10 \cdot \sin(x) + 15 = 20 \quad | -15$   
 $10 \cdot \sin(x) = 5 \quad | :10$   
 $\sin(x) = \frac{1}{2}$

$\arcsin(\sin(x)) = \arcsin(\frac{1}{2})$

$x_1 = \frac{\tilde{\pi}}{6}$

$x_2 = \tilde{\pi} - \frac{\tilde{\pi}}{6} = \frac{5}{6} \tilde{\pi}$

$D = [0; 2\tilde{\pi})$

$\sin(0) = \frac{1}{2} \sqrt{0}$   
 $\sin(\frac{\tilde{\pi}}{6}) = \frac{1}{2} \sqrt{1} = \frac{1}{2}$   
 $\sin(\frac{\tilde{\pi}}{4}) = \frac{1}{2} \sqrt{2}$   
 $\sin(\frac{\tilde{\pi}}{3}) = \frac{1}{2} \sqrt{3}$   
 $\sin(\frac{\tilde{\pi}}{2}) = \frac{1}{2} \sqrt{4} = 1$

b)  $3 \cdot \sin(x - 1) - 5 = -2 \quad | +5$

$3 \cdot \sin(x - 1) = 3 \quad | :3$

$\sin(x - 1) = 1$

$\arcsin(\sin(x - 1)) = \arcsin(1) = \frac{\tilde{\pi}}{2}$

$x - 1 = \frac{\tilde{\pi}}{2} \quad | +1$

$x = \frac{\tilde{\pi}}{2} + 1 \quad D = [0; 2\tilde{\pi})$

Für  $D = \mathbb{R}$

$x_k = \frac{\tilde{\pi}}{2} + 1 + k \cdot 2\tilde{\pi} ; \text{ mit } k \in \mathbb{Z}$