

# JAKSOLLISTEN ILMIOIDEN MALLINTAMINEN

$$f(x) = a \cdot \sin(bx+c) + d$$

ESIM

perusjakso 12

suurin arvo 10 , kohdassa 2  $f(2)=10$

pienin arvo 4 , kohdassa 8  $f(8)=4$

perusjakso  $\rightarrow \frac{2\pi}{b} = 12$

$$b = \frac{2\pi}{12} = \frac{\pi}{6}$$

$$\begin{cases} \text{suurin arvo} = 10 \\ \text{pienin arvo} = 4 \end{cases} \quad \begin{cases} a+d = 10 \\ -a+d = 4 \end{cases} \quad (\sin(bx+c) = \pm 1)$$
$$\underline{\quad\quad\quad} \\ 2d = 14 \\ d = 7 \rightarrow a = 3$$

$$f(x) = 3 \sin\left(\frac{\pi}{6}x + c\right) + 7$$

$$f(2) = 10 \rightarrow 3 \sin\left(\frac{\pi}{6} \cdot 2 + c\right) + 7 = 10$$

laskimella  $(\text{solve}(\dots, c) \mid 0 \leq c \leq 2\pi)$   
 $c = \frac{\pi}{6}$

$$\underline{\underline{f(x) = 3 \sin\left(\frac{\pi}{6}x + \frac{\pi}{6}\right) + 7}}$$

Sarja 1 : 8.1 - 8.6

Sarja 2 : 8.10  $\rightarrow$