

Yhdistetty funktio

- merkitään $(g \circ f)(x) = g(f(x))$



$$\text{Esim. a) } f(x) = (-x+1)^4$$

$$\begin{aligned} \uparrow \\ \text{sisäf.} &= -x+1 = s(x) \\ \text{ulkof.} &= x^4 = u(x) \end{aligned}$$

$$f(x) = u(s(x))$$

$$b) \quad f(x) = 2^{x^2+1}$$

$$s(x) = x^2 + 1$$

$$u(x) = 2^x$$

$$c) \quad f(x) = (x^3 + x)^4$$

$$s(x) = (x^3 + x)$$

$$u(t) = \overset{\downarrow}{t}^4 \longrightarrow (x^3 + x)^4$$

$$211. \quad f(x) = 2x^2$$

$$g(x) = \frac{1}{x-3}$$

$$a) \quad \underset{\substack{\uparrow \\ \text{ulk. f.}}}{f} \circ \underset{\substack{\uparrow \\ \text{sis. f.}}}{g}(x) = 2 \cdot \left(\frac{1}{x-3} \right)^2$$

Jakaja ei saa olla nolla!

$$\text{Määr. joukko: } \begin{array}{l} x-3 \neq 0 \\ x \neq 3 \end{array}$$

5. 14: 201, 202, 204, 205, 206