

**Zadatak 26.** Za dane funkcije  $f(x) = 5^{|2-x^2|}$  i  $g(x) = \log_{0.2} x$  riješi nejednadžbu  $(g \circ f)(x) > -x$ .

**Rješenje.**  $f(x) = 5^{|2-x^2|}$ ,  $g(f) = \log_{0.2} x$ ,  $x > 0$

$$(g \circ f)(x) = \log_{\frac{1}{5}} 5^{|2-x^2|} = -|2-x^2| \log_5 5 = -|2-x^2|$$

$$-|2-x^2| > -x \implies |2-x^2| < x$$

$$(i) \quad x \in \langle 0, \sqrt{2} \rangle$$

$$2-x^2 < x$$

$$x^2+x-2 > 0$$

$$(x+2)(x-1) > 0$$

$$\implies x \in \langle 1, \sqrt{2} \rangle$$

$$(ii) \quad x \in \langle \sqrt{2}, +\infty \rangle$$

$$x^2-2 < x$$

$$x^2-x-2 < 0$$

$$(x-2)(x+1) < 0$$

$$\implies x \in \langle \sqrt{2}, 2 \rangle$$

$$\implies x \in (1, 2).$$