

# Definiční obor

$$f(x) = \sqrt{\frac{x^2 + 2x - 15}{4^x - 16}} + \ln(16 - x^2)$$

I) odmocnina

$$\frac{x^2 + 2x - 15}{4^x - 16} \geq 0$$

čitatel:

$$x^2 + 2x - 15 = 0$$

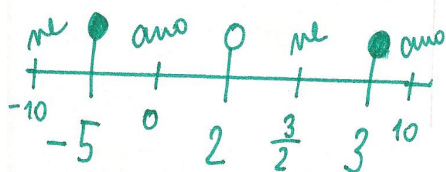
$$(x + 5)(x - 3) = 0$$

$$x_1 = -5 \quad x_2 = 3$$

jmenovatel:

$$4^x - 16 = 0$$

$$\underline{x = 2}$$



II) jmenovatel

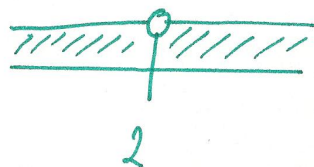
$$4^x - 16 \neq 0$$

na loze body

$$4^x = 16$$

$$4^x = 4^2$$

$$\underline{x = 2}$$

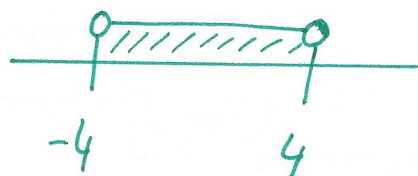


III) logaritmus

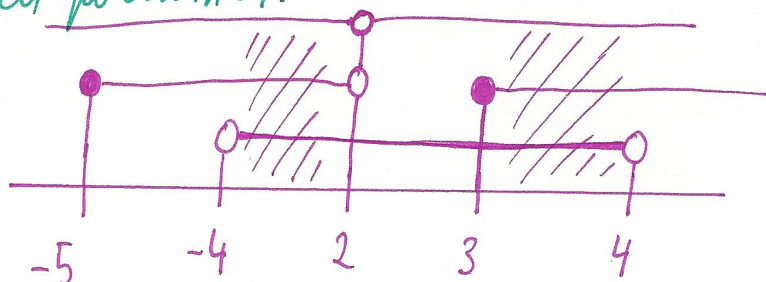
$$16 - x^2 > 0$$

$$16 = x^2$$

$$\underline{x = \pm 4}$$

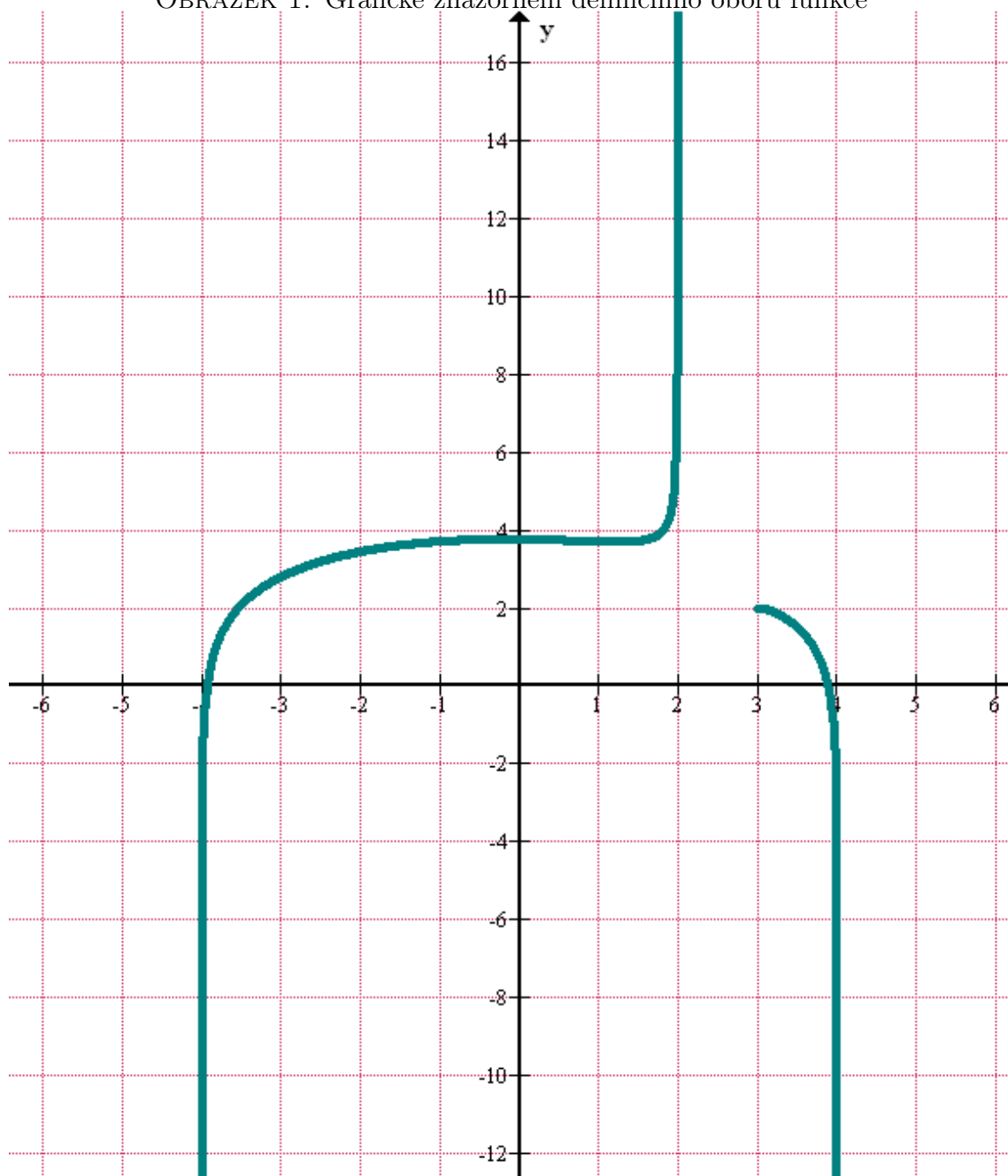


Průnik oběh podmínek:



$$\underline{x \in (-4, 2) \cup (3, 4)}$$

OBRÁZEK 1. Grafické znázornění definičního oboru funkce



Zdroj: program Graph