

1) Definiční obor

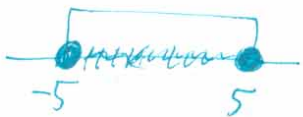
$$f(x) = \sqrt{25-x^2} + \ln \frac{x^3+4x^2-21x}{4-x}$$

i) odmocnina

$$25-x^2 \geq 0$$

$$x^2 \leq 25$$

$$|x| \leq 5$$



ii) ln

$$\frac{x^3+4x^2-21x}{4-x} > 0$$

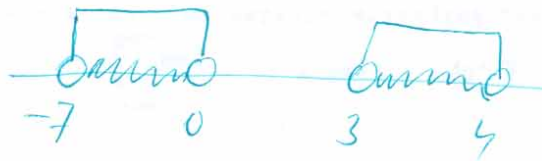
nulové body:

$$\text{čitatel: } x(x^2+4x-21) = 0$$

$$x_1 = 0 \quad (x+7)(x-3)$$

$$x_2 = -7 \quad x_3 = 3$$

$$\text{jmenovatel } x = 4$$



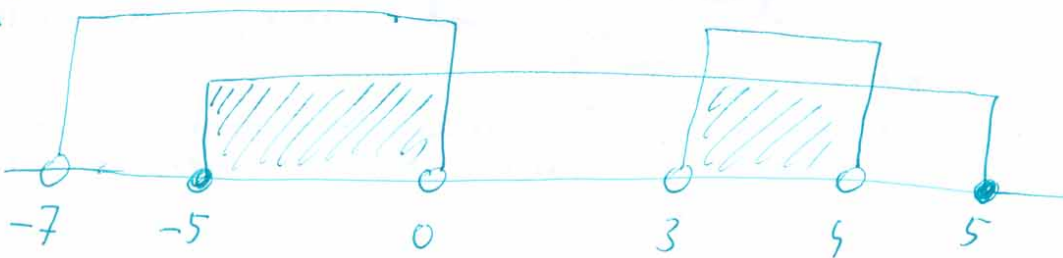
iii) jmenovatel

$$4-x \neq 0$$

$$x \neq 4$$

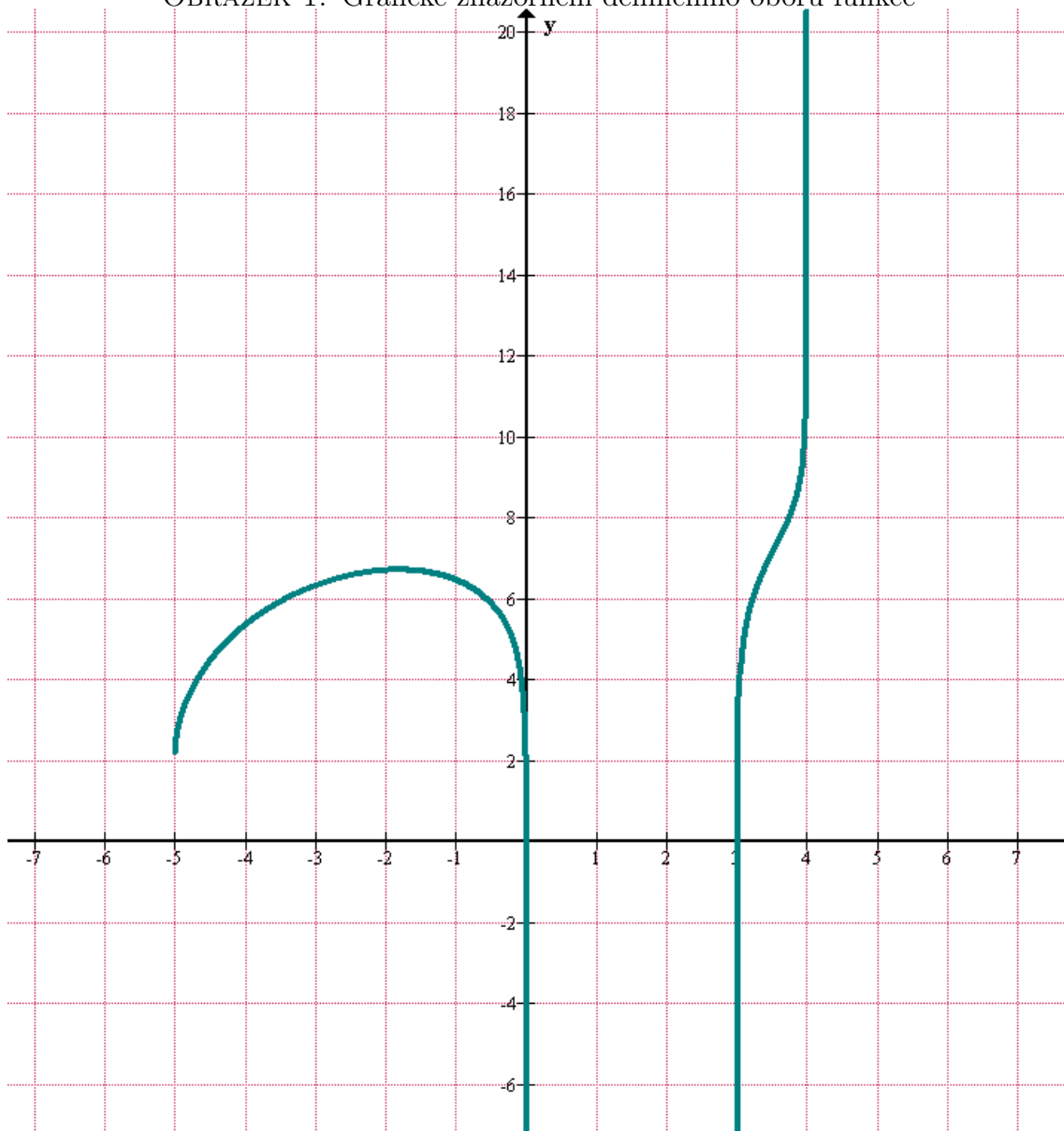


Spojen'



$$\underline{x \in (-5, 0) \cup (3, 4)}$$

OBRÁZEK 1. Grafické znázornění definičního oboru funkce



Zdroj: program Graph