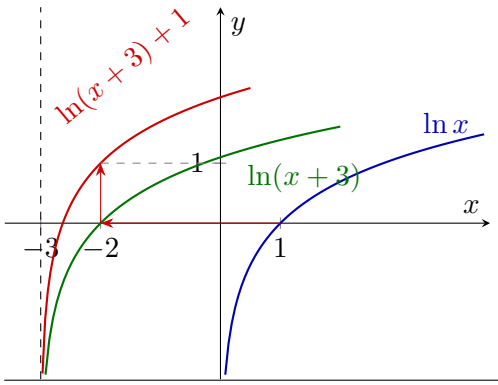
Určete $D(f)$ a graf:

① $y = \ln(x+3)+1$

$$\left.\begin{array}{r} x+3>0 \\ x>-3 \end{array}\right\} \; D(f) = (-3,\infty)$$



① $y = \ln x$

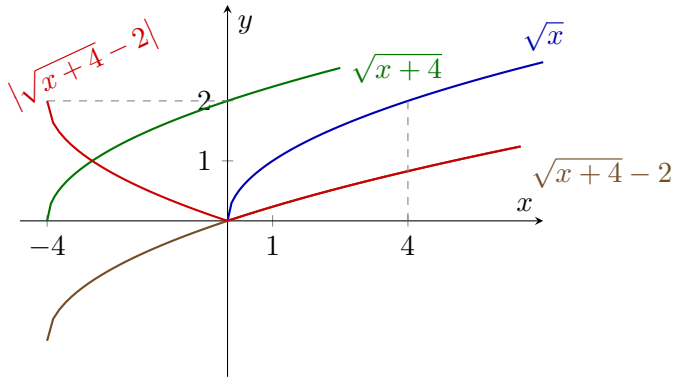
② $y = \ln(x+3)$ (posun o 3 vlevo)

③ $y = \ln(x+3)+1$ (posun o 1 nahoru)

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② $y = |\sqrt{x+4}-2|$

$$\left.\begin{array}{r} x+4\geq 0 \\ x\geq -4 \end{array}\right\} \; D(f) = \langle -4,\infty)$$



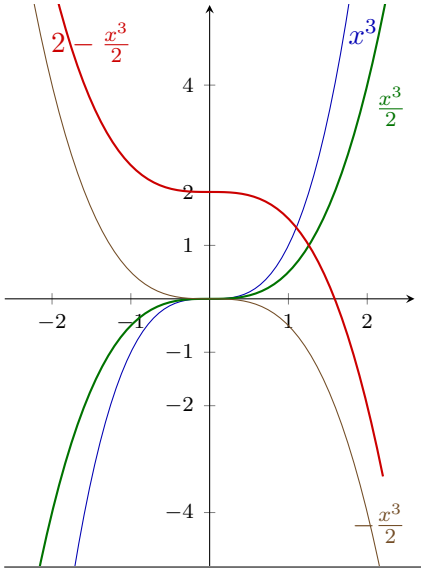
① $y = \sqrt{x}$

② $y = \sqrt{x+4}$ (posun o 4 vlevo)

③ $y = \sqrt{x+4}-2$ (posun o 2 dolů)

④ $y = |\sqrt{x+4}-2|$ záporné hodnoty se „překlopí“ kolem osy x do kladných

③ $y = 2 - \frac{x^3}{2}, \qquad D(f) = \mathbb{R}$



① $y = x^3$

② $y = \frac{x^3}{2}$ (hodnoty na ose y se zmenší na polovinu)

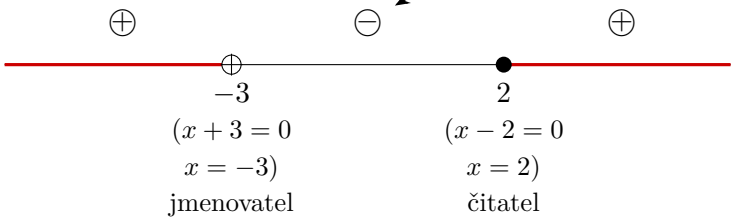
③ $y = -\frac{x^3}{2}$ (hodnoty se změní na opačné – překlopení kolem x)

④ $y = 2 - \frac{x^3}{2}$ (posun o 2 nahoru)

Určete $D(f)$:

① $y = \sqrt{\frac{x-2}{x+3}}$

$\frac{x-2}{x+3} \geq 0$ pro $x = 0 \rightarrow \frac{0-2}{0+3} = -\frac{2}{3} < 0$



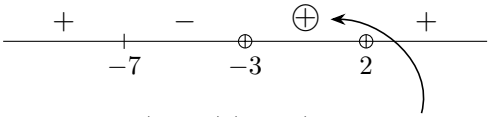
-3 ($x + 3 = 0$, $x = -3$) jmenovatel

2 ($x - 2 = 0$, $x = 2$) čitatel

$$\boxed{D(f) = (-\infty, -3) \cup \langle 2, \infty)}$$

② $y = \ln \dfrac{x^2+5x-14}{x^2+x-6}$

$$\frac{x^2+5x-14}{x^2+x-6} > 0, \qquad \text{upravme:} \quad \frac{(x-2)(x+7)}{(x+3)(x-2)} > 0$$



pro $x = 0$: $\dfrac{(0-2)(0+7)}{(0+3)(0-2)} = \dfrac{-14}{-6} > 0$

Pozor: $x \neq 2 \ldots$ aby ve jmenovateli nebyla 0, ale lze krátit $(x-2) \Rightarrow$ neovlivní znaménko

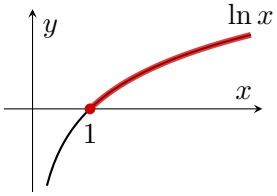
$$\boxed{D(f) = (-\infty, -7) \cup (-3, 2) \cup (2, \infty)}$$

---

③ $y = \ln(\ln x)$

$$\begin{aligned} x &> 0 \\ \ln x &> 0 \\ x &> 1 \end{aligned}$$

$$\boxed{D(f) = (1, \infty)}$$



z grafu je vidět, že pro $x > 1$ je $\ln x > 0$