

CdL in BIOTECNOLOGIE

Matematica (corso B) a.a. 2010/2011

Esercizi sui domini di funzione

21 ottobre 2010

Verificare che il dominio delle seguenti funzioni è l'insieme indicato a lato:

$$f(x) = \sqrt[6]{x-6}, \quad x \in [6, +\infty);$$

$$f(x) = \log_6(\sqrt[6]{x-6}), \quad x \in (6, +\infty) ;$$

$$f(x) = \sqrt[6]{\log_6(\sqrt[6]{x-6})}, \quad x \in [7, +\infty) ;$$

$$f(x) = \sqrt[4]{\frac{\log_2 x}{x-6}}, \quad x \in (0, 1] \cup (6, +\infty);$$

$$f(x) = \frac{\sqrt[5]{5x}}{(x^2-1)(x^3+8)}, \quad x \in \mathbf{R} \setminus \{\pm 1, -2\};$$

$$f(x) = \frac{2^x}{(2^x+2)(4^x-3 \cdot 2^x+2)}, \quad x \in \mathbf{R} \setminus \{0, 1\};$$

$$f(x) = \sqrt[4]{\sin x + |\cos x|}, \quad \{x \in \mathbf{R} : x \in [2k\pi, (2k+1)\pi], k \in \mathbf{Z}\} ;$$

$$f(x) = \log_{10}((x-1)^2), \quad x \in \mathbf{R} \setminus \{1\};$$

$$f(x) = \log_2(\log_{1/2}(x^2)), \quad x \in (-1, 0) \cup (0, 1);$$

$$f(x) = \log_2 |\log_{1/2}(x^2)|, \quad x \in \mathbf{R} \setminus \{0, \pm 1\};$$

$$f(x) = \log_4((x-1)^2) + \log_{1/4}(2-x), \quad x \in (-\infty, 2) \setminus \{1\};$$

$$f(x) = \sqrt{\log_4((x-1)^2)} + \sqrt[3]{\log_{1/4}(2-x)}, \quad x \in (-\infty, 0];$$

$$f(x) = \sqrt[3]{\log_4((x-1)^2)} + \sqrt{\log_{1/4}(2-x)}, \quad x \in (1, 2);$$

$$f(x) = \log_2(-\sin x) + \log_2 |\cos x|, \quad x \in (\pi + 2k\pi, 2\pi + 2k\pi) \setminus \{\frac{3}{2}\pi + 2k\pi\}, k \in \mathbf{Z};$$

$$f(x) = \log_3(5^{3x} \log_{2-x}(x^2-1)), \quad x \in (-\infty, -\sqrt{2}) \cup (1, \sqrt{2});$$

$$f(x) = \log_{x^2+2x-3}(x^3+4x^2+3x), \quad x \in (0, +\infty) \setminus \{\sqrt{5}-1\}.$$