

ESERCIZI SULLO STUDIO DEL GRAFICO DELLE FUNZIONI

Determinare

- 1) il dominio;
- 2) il segno;
- 3) gli eventuali asintoti;
- 4) gli intervalli di crescita e decrescenza;
- 5) eventuali punti di massimo e minimo locali e globali;
- 6) gli intervalli di convessità e concavità e gli eventuali flessi;
- 7) il grafico

delle seguenti funzioni:

$$f(x) = \ln(x^2 - 1)$$

$$f(x) = \frac{x^2 - 5x + 4}{x - 5}$$

$$f(x) = \frac{3x - 1}{2x + 1}$$

$$f(x) = e^{\frac{x}{x^2 - 1}}$$

$$f(x) = \ln(4 - x^2)$$

$$f(x) = \frac{3x^2 + 1}{x - 2}$$

$$f(x) = \frac{x^2 + x - 2}{x - 2}$$

$$f(x) = \frac{\ln x}{1 - x}$$

$$f(x) = -2\log(1 - x^2)$$

$$f(x) = \frac{x^2 + 2x + 3}{2 - x}$$

$$f(x) = \frac{3x^2 + 1}{x - 2}$$

$$f(x) = \frac{2x - 6}{4 - x^2}$$

$$f(x) = \frac{x}{x^2 - 4}$$

$$f(x) = e^{\frac{x+2}{1-2x}}$$

$$f(x) = \frac{\ln(x^2)}{4x}$$

$$f(x) = \frac{(\ln x) - 1}{2x}$$

$$f(x) = \ln \frac{2x}{x+1}$$

$$f(x) = 5x^2 e^{-5x}$$

$$f(x) = x e^{\frac{x-1}{x}}$$

$$f(x) = e^x + e^{-3x}$$

$$f(x) = e^{\frac{3}{x^2-1}}$$

$$f(x) = 5 \ln \left(\frac{x^2}{x-1} \right)$$

$$f(x) = \log \frac{x+1}{x}$$

$$f(x) = e^{1-\frac{1}{x}}$$

$$f(x) = (x-2)e^{x+1}$$

$$f(x) = \frac{x^2}{x+1}$$

$$f(x) = \frac{4x+1}{3-x}$$

$$f(x) = x^3 \ln x$$

$$f(x) = \frac{x^2+1}{x^2-1}$$

$$f(x) = (x^2-3)e^{2-x}$$

$$f(x) = \ln(x^2-2x+5)$$

$$f(x) = \frac{3-2x}{x+4}$$

$$f(x) = 2 \ln \left(\frac{x-2}{x} \right) - 1$$

$$f(x) = \frac{x+3}{x^2}$$

$$f(x) = \frac{1}{2} e^{\frac{1}{2x-1}}$$

$$f(x) = \frac{e^x + 3}{e^x - 1}$$

$$f(x) = \frac{\ln x}{1 + \ln x}$$

$$f(x) = (x-2)e^{\frac{1}{x}}$$

$$f(x) = \frac{x^2+2}{x-3}$$

$$f(x) = e^{\frac{2x}{3+x}} - 1$$

$$f(x) = \frac{1-4x^2}{3(4x^2-4x+1)}$$

$$f(x) = e^{\frac{x-2}{2x}}$$

$$f(x) = e^{\frac{x-1}{x+1}} + 2$$

$$f(x) = \frac{2x+1}{x-2}$$

$$f(x) = \frac{e^{-x}}{e^{-x} + 2}$$

$$f(x) = \frac{1+x}{3-x} + 4$$

$$f(x) = 2 - \ln\left(\frac{1-x}{x-2}\right)$$

$$f(x) = (x-1)e^{-x}$$

$$f(x) = \frac{x^2 - 1}{2x+1}$$

$$f(x) = xe^{1-x} + 3e^{1-x}$$

$$f(x) = \ln(x-3) - \ln(2x+1)$$

$$f(x) = xe^{-2x}$$

$$f(x) = \frac{x^2 - 3x + 1}{x}$$

$$f(x) = \ln \frac{e^x + 1}{e^x - 1}$$

$$f(x) = \ln(1 - \ln x)$$

$$f(x) = 1 - \ln(\ln(x))$$

$$f(x) = \frac{1}{x} - 8x^2$$

$$f(x) = \frac{3x}{1-x^2}$$

$$f(x) = 3e^{\frac{4-2x}{x+1}}$$

$$f(x) = \frac{2-4x}{x}$$

$$f(x) = -\frac{1}{2} \ln \frac{5-x}{4-x}$$

$$f(x) = \frac{1}{2} x^2 e^{-x} + 2$$

$$f(x) = \ln\left(\frac{x+1}{x}\right) - 1$$

$$f(x) = \frac{1}{2+x} + \frac{1}{2-x}$$

$$f(x) = \frac{\ln(1-2x) - 1}{\ln(1-2x)}$$

$$f(x) = \ln(x-1) - \ln(x-4)$$

$$f(x) = xe^{-\frac{2}{x}}$$

$$f(x) = \frac{2x+1}{1-x} + 3$$

$$f(x) = \frac{e^{4x+2}}{4x+2}$$

$$f(x) = \frac{\ln x - 1}{x}$$

$$f(x) = \frac{3}{x-2} e^{x-2}$$

$$f(x) = (x+1)e^{-x}$$

$$f(x) = \frac{1}{\ln(1-3x)}$$

$$f(x) = \frac{e^{2x} - 1}{3e^{2x}}$$

$$f(x) = \frac{e^{x-1}}{x^2}$$

$$f(x) = \frac{x^2 - 1}{e^x}$$