Exercise 1. For every one of the following functions \( f(x) \), find the intervals on which \( f \) is increasing or decreasing, the local maxima and minima, the intervals of concavity and the inflection points.

(a) \( f(x) = 2x^3 - 9x^2 + 12x - 3 \).

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

(c) \( f(x) = (\cos x)^2 - 2\sin x \), defined on \([0, 2\pi]\).

(d) \( f(x) = x^2 \ln x \).

(e) \( f(x) = x^4 e^{-x} \).

(f) \( f(x) = 5x^{2/3} - 2x^{5/3} \).

(g) \( f(x) = \ln(x^2 + 9) \).

Exercise 2. Draw the graph of the following functions. Consider also the intervals of concavity and the inflection points.

(a) \( f(x) = \frac{x^2 - 4}{x^2 + 4} \).

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

(c) \( f(x) = x - \frac{1}{6}x^2 - \frac{3}{2} \ln x \).

(d) \( f(x) = e^{\arctan x} \).