

Example

For the given functions, find all inflection points, as well as the intervals where the function is concave upward or downward.

(a) $f(x) = x^3 - 6x^2 + x - 7$

(b) $f(x) = x^4 - 4x^3 + x + 1$

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

Example

Find all the critical numbers for

$$f(x) = x^3 - 3x + 1,$$

and identify each as a relative minimum or relative maximum using the second derivative test.