

Sketch of a graph

1. Let $f(x) = x^3 - 6x^2 + 9x + 1$.
 - (1) Find the intervals where f is increasing and the intervals where f is decreasing.
 - (2) Find the local maximum point and the local minimum point of f .
 - (3) Find the intervals where f is concave up and the intervals where f is concave down.
 - (4) Find the inflection point of f .
 - (5) Sketch f .

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2. Let $f(x) = \frac{x^2 - 3}{x^3}$.
- (1) Find the asymptote of f .
 - (2) Find the x -intercepts and y -intercepts of f .
 - (3) Show that f is an odd function.
 - (4) Find the intervals where f is increasing and the intervals where f is decreasing.
 - (5) Find the local maximum point and the local minimum point of f .
 - (6) Find the intervals where f is concave up and the intervals where f is concave down.
 - (7) Find the inflection points of f .
 - (8) Sketch f .