

4.1 Using First and Second Derivatives

Name:

Date:

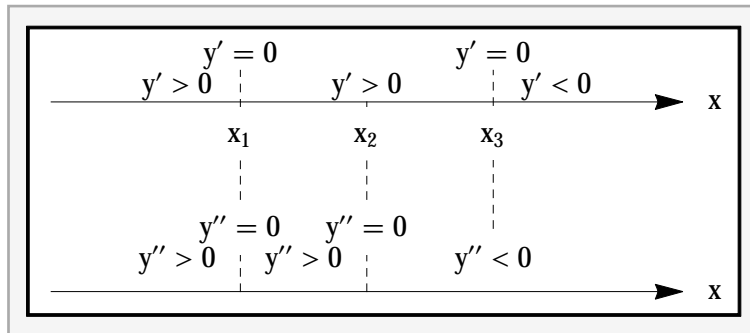
P 5. Find the critical points and inflection points of $f(x) = x^5 - 10x^3 - 8$.

P 7. Find the critical points and inflection points of $f(x) = 5x - 3 \ln x$.

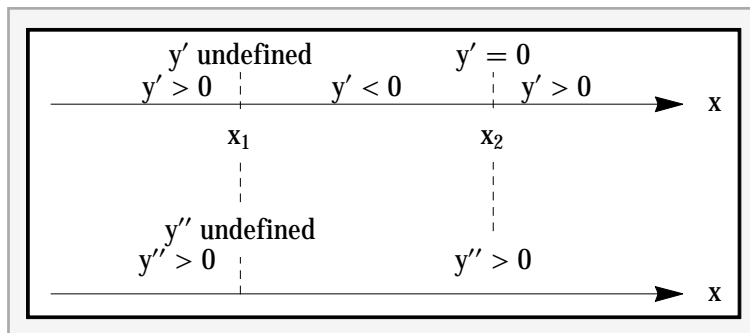
P 9. Find all local maxima and minima of $f(x) = 3x^4 - 3x^3 + 6$.

P 12. Find all local maxima and minima of $f(x) = \frac{x}{x^2 + 1}$.

P 27. Sketch a possible graph of $y = f(x)$, using the given information about the derivatives $y' = f'(x)$ and $y'' = f''(x)$. Assume that the function is defined and continuous for all real x .



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P 49. The differentiable function f has $x = 1$ as its only zero and $x = 2$ as the x -coordinate of its only critical point. For $y = f(x^2 - 3)$, find all (a) Zeros and (b) Critical points.