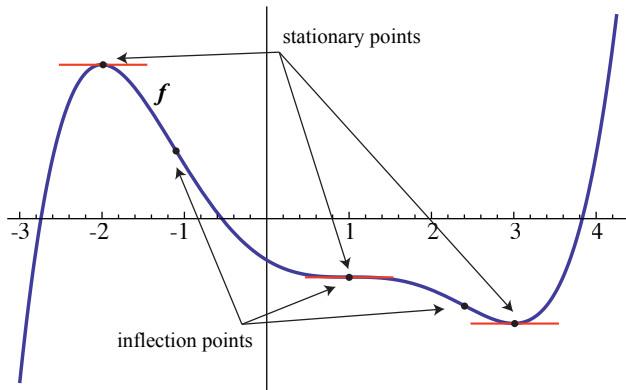


1. Using the graph of f below we can identify features such as stationary points, local extrema, and inflection points for the graph of f .

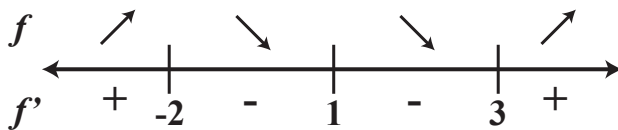


f has stationary points at $x = -2, 1,$ and 3 since $f'(x) = 0$ at $x = -2, 1,$ and 3 .

f has a local max at $x = -2$ and a local min at $x = 3$.

f has inflection points at $x \approx -1.1, x = 1$ and $x \approx 2.4$ since the concavity of f changes at those x -values. Note: f' will have stationary points at these same x -values since $f''(x) = 0$ there.

Sign chart for f and f' .



f is increasing on $(-\infty, -2) \cup (3, \infty)$, therefore f' is positive on $(-\infty, -2) \cup (3, \infty)$.

f is decreasing on $(-2, 1) \cup (1, 3)$, therefore f' is negative on $(-2, 1) \cup (1, 3)$.

2. A sketch of the graph of f' (along with f) is shown below.

