

Graphing $f(x)$ When Given $f'(x)$

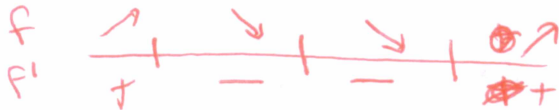
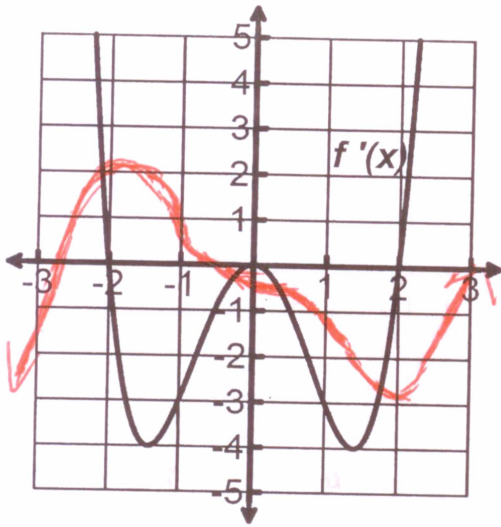
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1. Where $f'(x) = 0$, a max/min or horizontal tangent occurs on $f(x)$. If the y -values around those roots change from $+$ to $-$, then that root is a max---if the y -values change from $-$ to $+$, then the root is a min. If the y -values do not change signs at the root, then that root is a horizontal tangent on $f(x)$.
2. Where $f'(x) > 0$ or above the x -axis, $f(x)$ increases and where $f'(x) < 0$ or below the x -axis, $f(x)$ decreases.
3. Take the slopes of the $f'(x)$ graph to determine the concavity of $f(x)$. Maxs/Mins on $f'(x)$ are inflection points on $f(x)$.

For 1 - 2, sketch $f(x)$ on the same coordinate plane.

1.



2.

