Concavity

A curve that can hold water being poured into is concave up and one cup that can't is concave down.

- If f'' is positive for an x value, then $f(x)$ is concave up at that point.

Second Derivative Test—tells whether extrema is relative max/min. Plug all the critical numbers in that occur when $f'(x)=0$ or is undefined into $f''(x)$. If the result is positive, the critical number is a relative minimum on $f(x)$. If result is negative, its a relative max. If Ø no conclusion can be drawn, and you must resort to 1st Derivative wiggle graph.

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- All inflection points have a second derivative of zero if it exists, but not all points with a second derivative of 0 are inflection points.