

The geometric interpretation of f'' :



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saddle or inflection points

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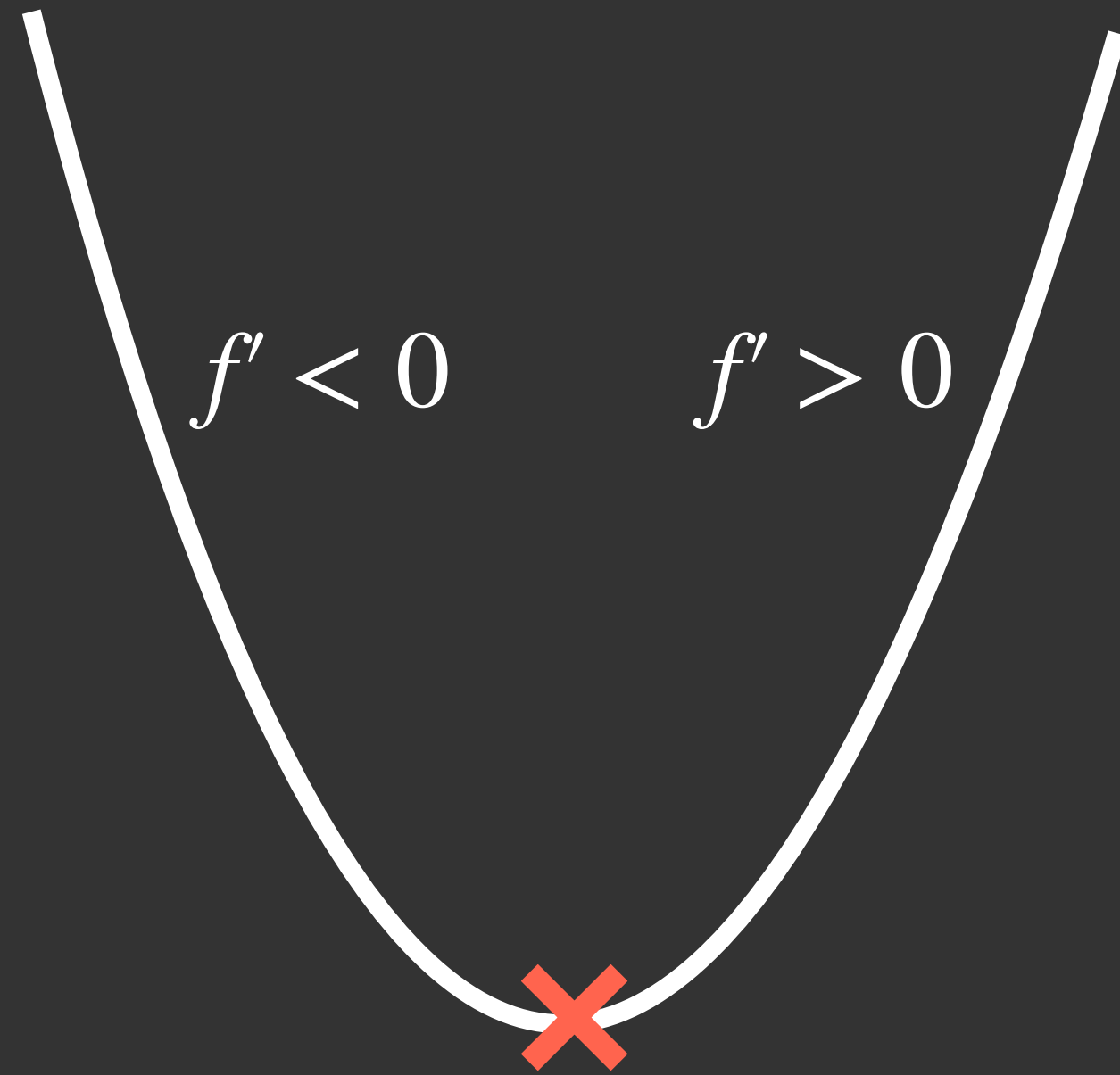
3. If $f'(c) = 0$ and $f''(c) = 0$ then the slope often doesn't change sign
i.e. it goes from positive slope to zero to positive slope (decreasing to zero then increasing), or negative to zero to negative (increasing to zero then decreasing).

possible shapes:



example

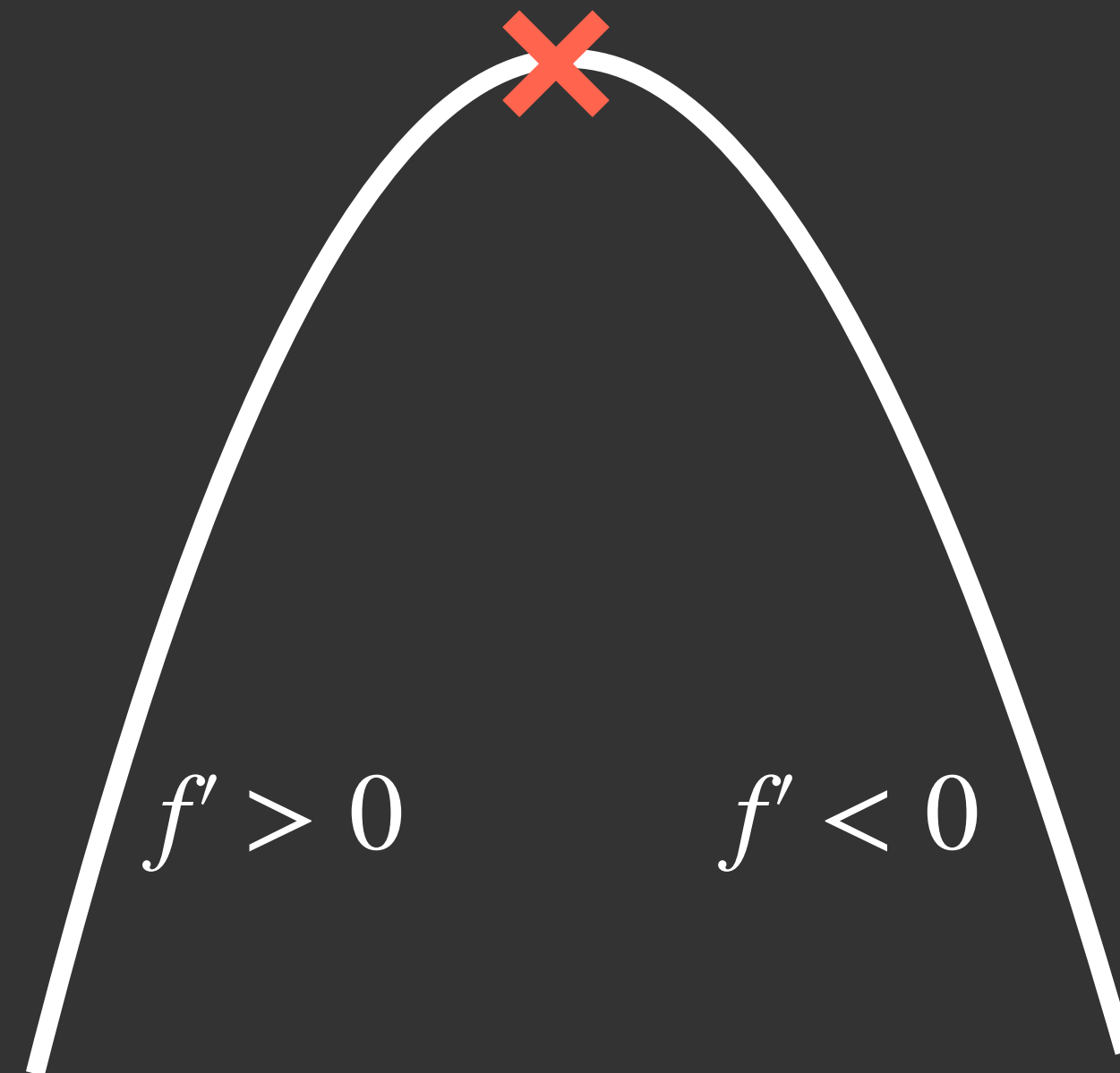
$$f(x) = x^2$$



local min

$$f' = 0, f'' > 0$$

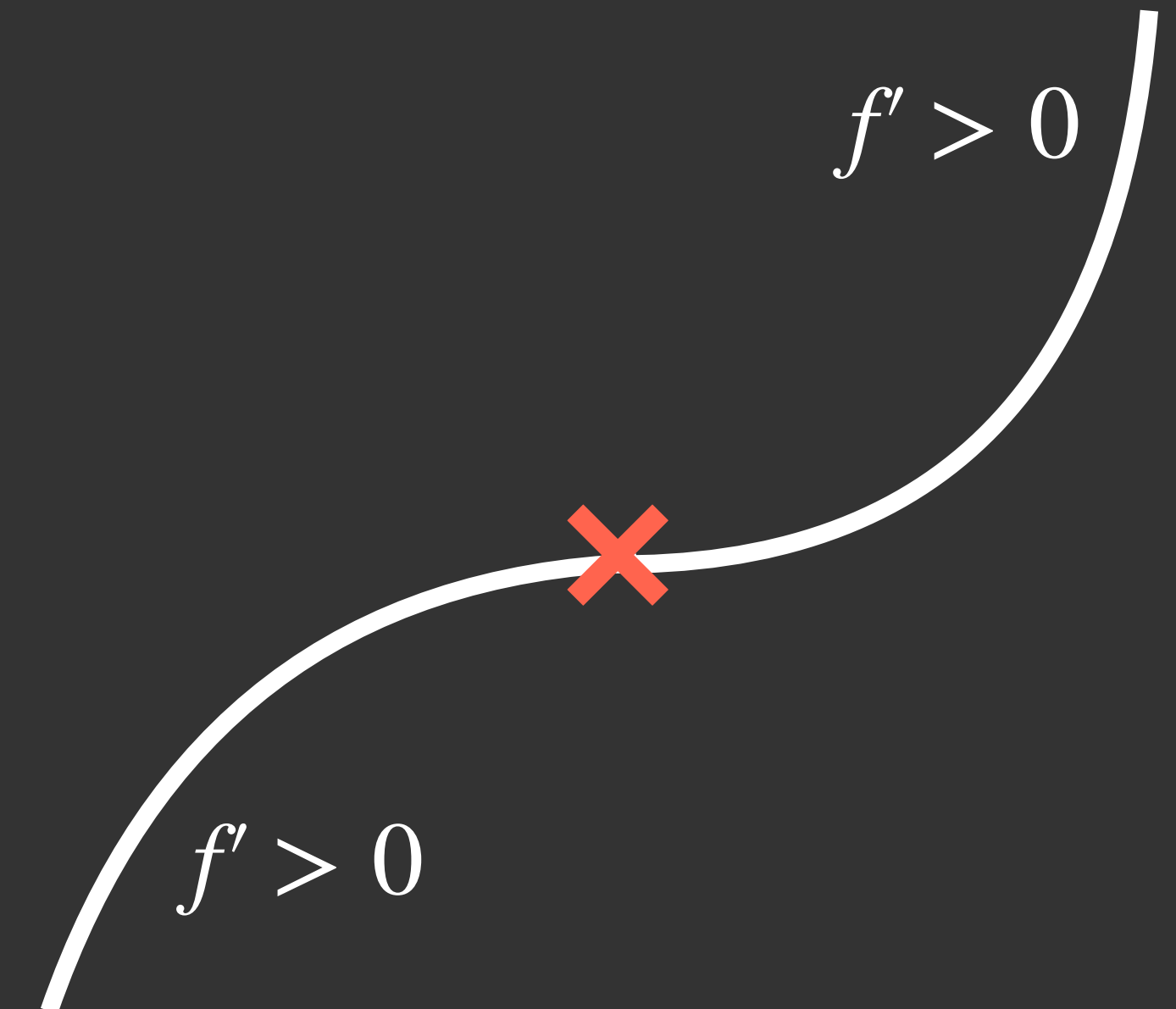
$$f(x) = -x^2$$



local max

$$f' = 0, f'' < 0$$

$$f(x) = x^3$$



inflection point

hands on exercises in finding these points in your tutorial...