

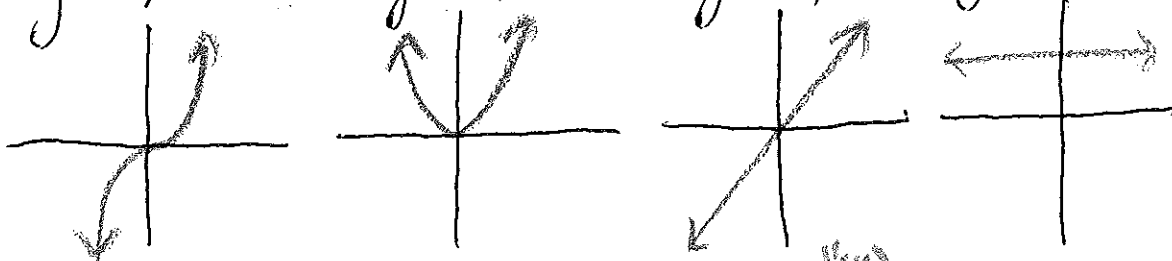
# Sketching the Derivative $f'(x)$

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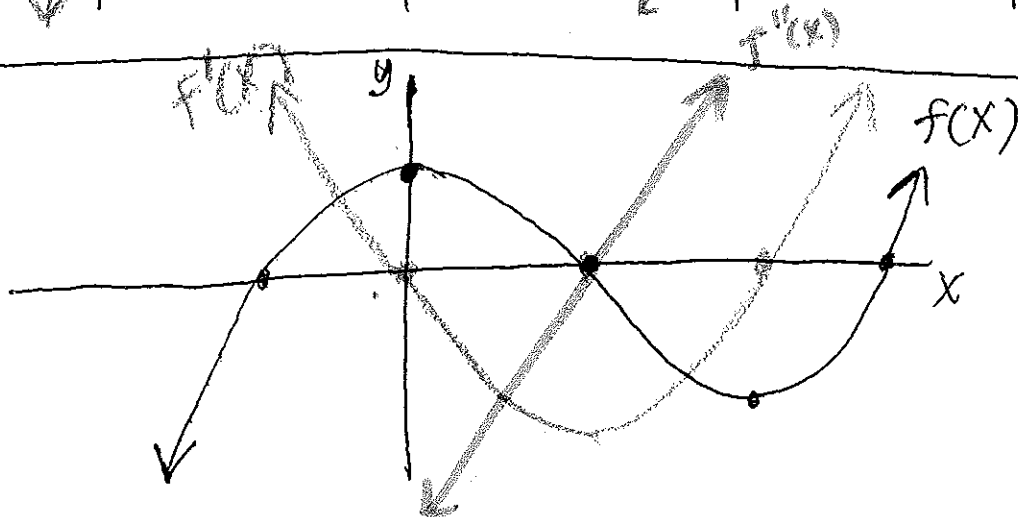
Es: How do we graph the derivative function?

## Examples

$$y = x^3 \rightarrow y' = 3x^2 \rightarrow y'' = 6x \rightarrow y''' = 6$$



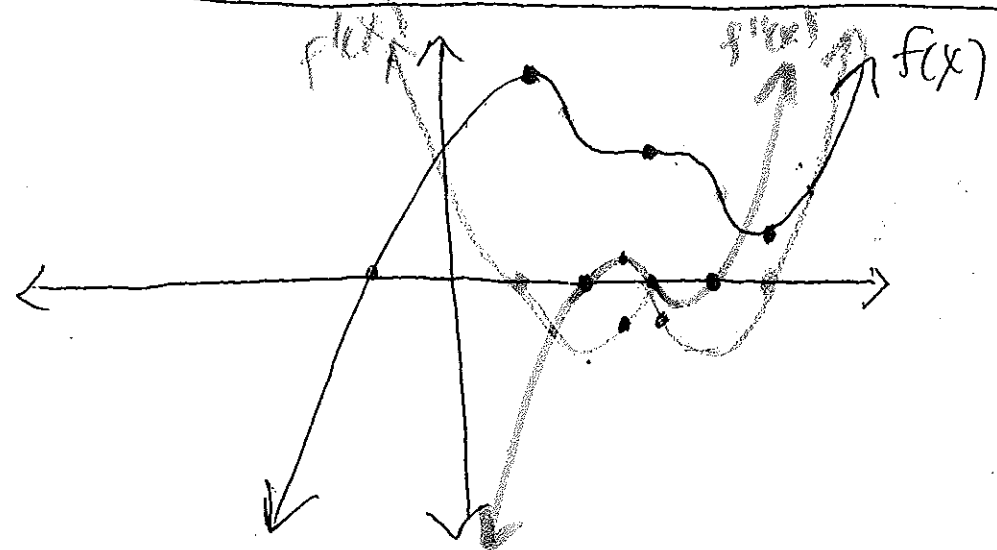
## Investigate



what do we know?

$f(x)$	$f'(x)$
<ul style="list-style-type: none"> <li>Relative min/max</li> <li><math>f(x)</math> is increasing</li> <li><math>f(x)</math> is decreasing</li> </ul>	<ul style="list-style-type: none"> <li>Zeros</li> <li>y-values are positive</li> <li>y-values are negative</li> </ul>
$f(x)$	$f''(x)$
<ul style="list-style-type: none"> <li>Point of Inflection</li> <li>Concave upward</li> <li>Concave downward</li> </ul>	<ul style="list-style-type: none"> <li>Zeros</li> <li>y-values are positive</li> <li>y-values are negative</li> </ul>

Practice  
Sketch  
 $f'(x)$   
and  $f''(x)$



Summary