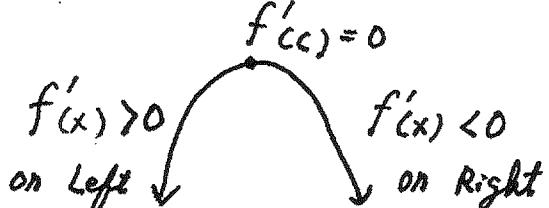
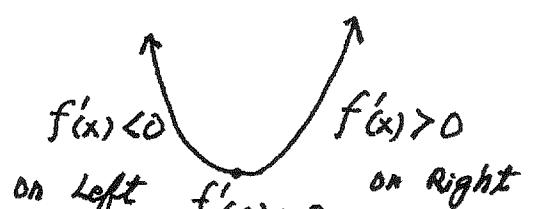
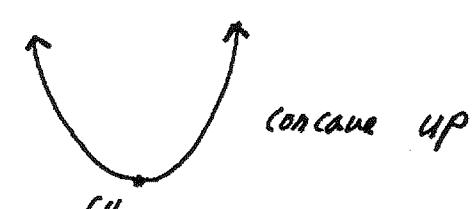
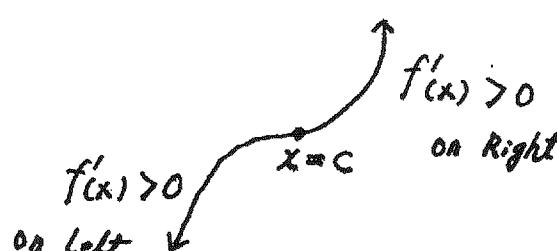
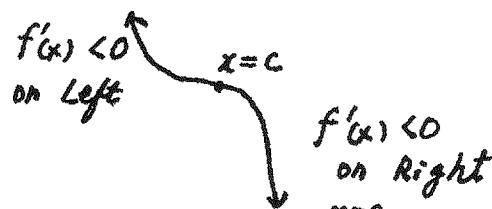
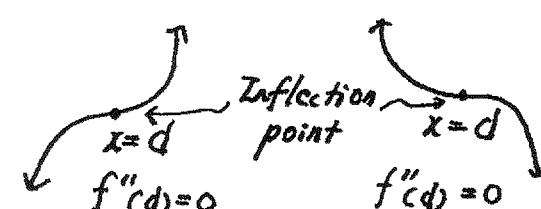
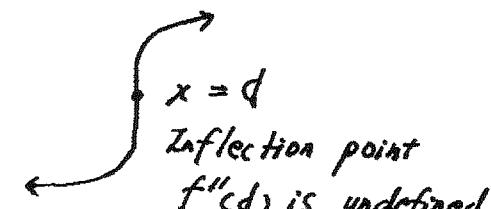


Guidelines for Curve Analysis for given $F(x)$

The First Derivative Test	The Second Derivative Test
<p>The Critical point $(c, f(c))$ is a relative local max where $f'(c) = 0$.</p>  <p>$f'(x) > 0$ on Left \downarrow</p> <p>$f'(x) < 0$ on Right \downarrow</p> <p>Sign Diagram: $f'(x) : \begin{array}{c cc} & + & - \\ \leftarrow & & \rightarrow \\ & \oplus & \ominus \end{array}$</p>	<p>If $f''(c) < 0$ at Critical point $x=c$, $(c, f(c))$ is a relative max.</p>  <p>$f''(c) < 0$</p> <p>Concave Down</p> <p>Sign Diagram: $f''(x) : \begin{array}{c cc} & & + \\ \leftarrow & & \rightarrow \\ & \ominus & \oplus \end{array}$</p>
<p>The Critical point $(c, f(c))$ is a relative local min, where $f'(c) = 0$.</p>  <p>$f'(x) < 0$ on Left \downarrow</p> <p>$f'(c) = 0$</p> <p>$f'(x) > 0$ on Right \downarrow</p> <p>Sign Diagram: $f'(x) : \begin{array}{c cc} & - & + \\ \leftarrow & & \rightarrow \\ & \ominus & \oplus \end{array}$</p>	<p>If $f''(c) > 0$ at Critical point $x=c$, $(c, f(c))$ is a relative min.</p>  <p>$f''(c) > 0$</p> <p>Concave Up</p> <p>Sign Diagram: $f''(x) : \begin{array}{c cc} & & + \\ \leftarrow & & \rightarrow \\ & \oplus & \ominus \end{array}$</p>
<p>The Critical point $(c, f(c))$ is neither a relative local max or a relative min, where $f'(c) = 0$.</p>  <p>$f'(x) > 0$ on Left \downarrow</p> <p>$x=c$</p> <p>$f'(x) > 0$ on Right \downarrow</p>  <p>$f'(x) < 0$ on Left \downarrow</p> <p>$x=c$</p> <p>$f'(x) < 0$ on Right \downarrow</p> <p>Sign Diagram: $f'(x) : \begin{array}{c cc cc} & & \oplus & & \ominus & \\ \leftarrow & & \hline & & \hline & \rightarrow \\ & \oplus & & & \ominus & \ominus \end{array}$</p>	<p>If $f''(d) = 0$, $(d, f(d))$ is an inflection point.</p>  <p>$x=d$</p> <p>Inflection point</p> <p>$f''(d) = 0$</p>  <p>$x=d$</p> <p>Inflection point</p> <p>$f''(d)$ is undefined.</p> <p>Sign Diagram: $f''(x) : \begin{array}{c cc cc} & & - & & + & \\ \leftarrow & & \hline & & \hline & \rightarrow \\ & \ominus & & & \oplus & \ominus \end{array}$</p>