

x	a	b	c	d	e
$f''(x)$	0	+		0	-
f'	v_a	1	2	v_d	v_e
f	$-\infty$		0		$+\infty$

The diagram illustrates the behavior of the function f and its derivative f' around a point $x = c$. The second derivative $f''(x)$ changes sign at $x = c$, indicating a local maximum or minimum. The curve f' has a cusp at $x = a$ and a sharp corner at $x = b$. The curve f is increasing and concave up for $x < c$ and increasing and concave down for $x > c$.