

$x$	0	1	2	3			
$f'(x)$		+	0	-	0	+	
$f(x)$							

The graph shows a function  $f(x)$  on the interval  $[0, 3]$ . The function starts at  $(0, 1)$ , increases to a local maximum at  $(1, 6)$ , decreases to a local minimum at  $(2, 5)$ , and then increases to  $(3, 10)$ . The derivative  $f'(x)$  is positive on  $(0, 1)$ , zero at  $x=1$ , negative on  $(1, 2)$ , zero at  $x=2$ , and positive on  $(2, 3)$ .