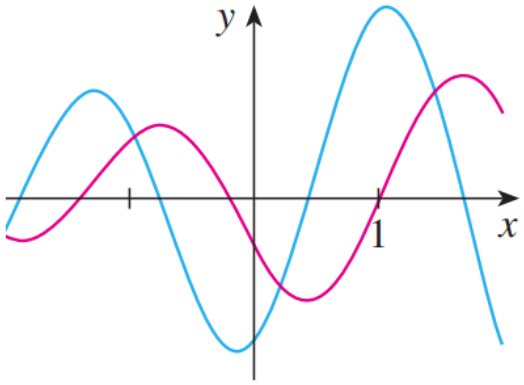
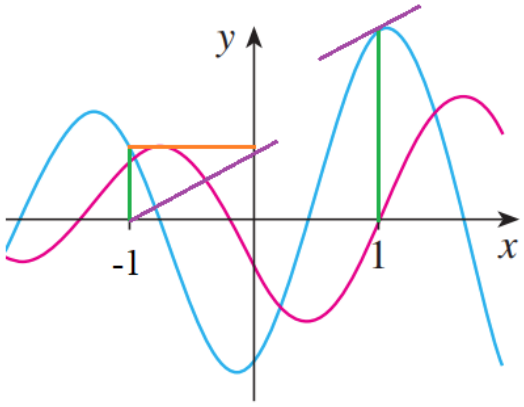
Exercise 48

The graphs of a function f and its derivative f' are shown. Which is bigger, $f'(-1)$ or $f''(1)$?



Solution

The graph of $f'(x)$ is shown in blue. Notice its value at $x = -1$ is positive, and its slope at $x = 1$ is positive.



To find out which is bigger, a parallel purple line is drawn going through $(-1, 0)$. Since it's lower than the orange line on the y-axis, $f'(-1)$ is bigger than $f''(1)$.