

Class Drill 5: Finding Derivatives Graphically Using a Ruler

The goal: Given the graph of f on the top axes on the next page, make a graph of f' on the bottom axes.

On the graph of f' , the input will be x and the output will be $f'(x)$. Remember the graphical interpretation of $f'(x)$:

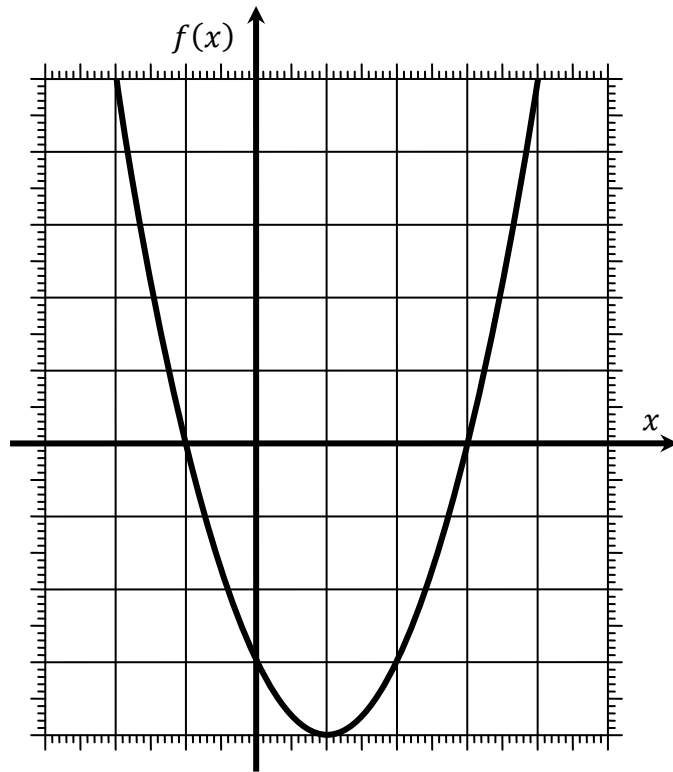
Definition of the Derivative

- **symbol:** $f'(a)$
- **graphical interpretation:** $f'(a)$ is the number that is the slope of the line tangent to the graph of f at the point where $x = a$.

Part 1: Prepare the data for your graph of f' by filling out the following table.

x	what to do on the graph of f	$f'(x)$
-2	Draw the line tangent to the graph of f at the point where $x = -2$ and find its slope m . This slope m will be the value of $f'(-2)$.	
-1	Draw the line tangent to the graph of f at the point where $x = -1$ and find its slope m . This slope m will be the value of $f'(-1)$.	
0	Draw the line tangent to the graph of f at the point where $x = 0$ and find its slope m . This slope m will be the value of $f'(0)$.	
1	Draw the line tangent to the graph of f at the point where $x = 1$ and find its slope m . This slope m will be the value of $f'(1)$.	
2	Draw the line tangent to the graph of f at the point where $x = 2$ and find its slope m . This slope m will be the value of $f'(2)$.	
3	Draw the line tangent to the graph of f at the point where $x = 3$ and find its slope m . This slope m will be the value of $f'(3)$.	
4	Draw the line tangent to the graph of f at the point where $x = -2$ and find its slope m . This slope m will be the value of $f'(4)$.	

Part 2 is on the next page.



Part 2: Using the $(x, f'(x))$ data from your table, make a graph of f' .

