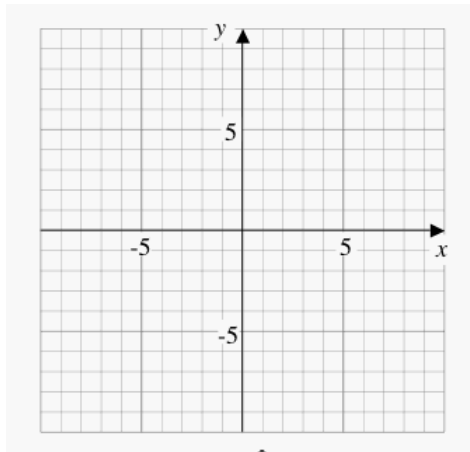


Functions: First & Second Derivatives

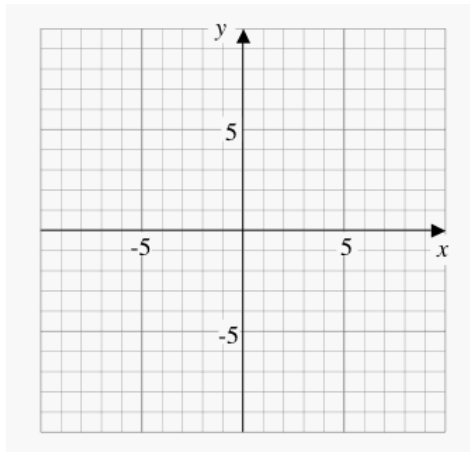
Graph each $f(x)$ and its $f'(x)$ and $f''(x)$. (Extend graphs to edge of grid). Complete each table of values.

Draw tangents on $f(x)$ at $x=-2$, $x=0$, $x=2$. Identify the Local Extrema, Concavity & interval, and Points of Inflection for $f(x)$.



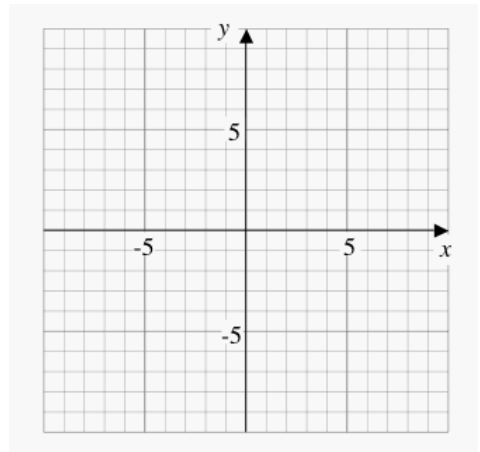
1. $f(x) = x^2 - 3$

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



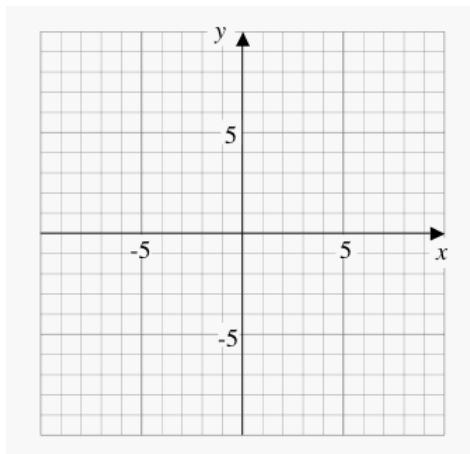
$f'(x) =$

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



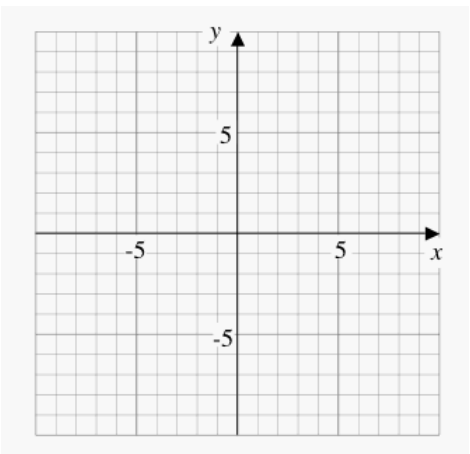
$f''(x) =$

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



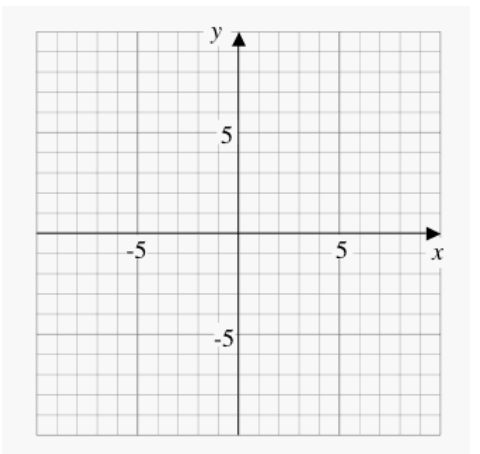
2. $f(x) = -x^2 + 9$

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



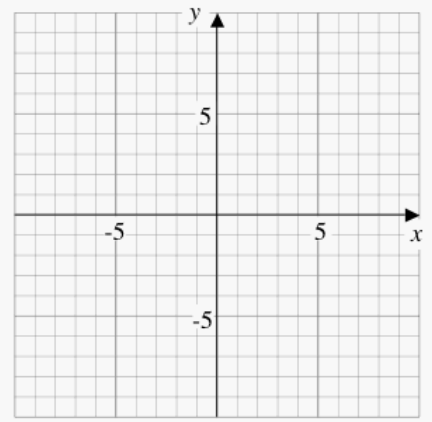
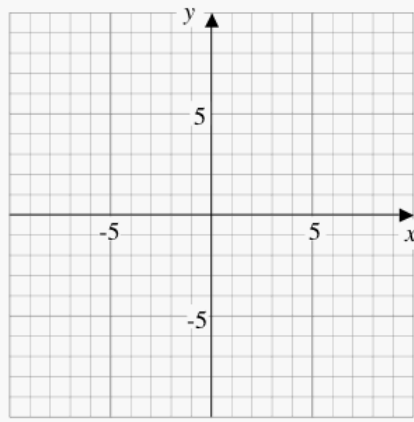
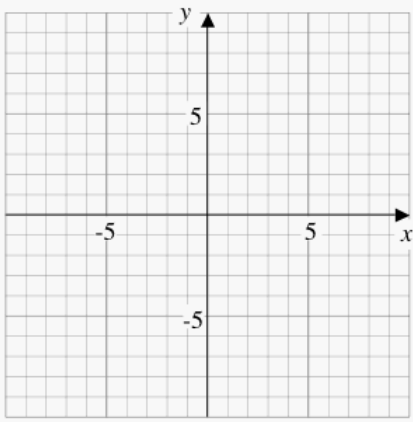
$f'(x) =$

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



$f''(x) =$

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



3.

$$f(x) = -x^3$$

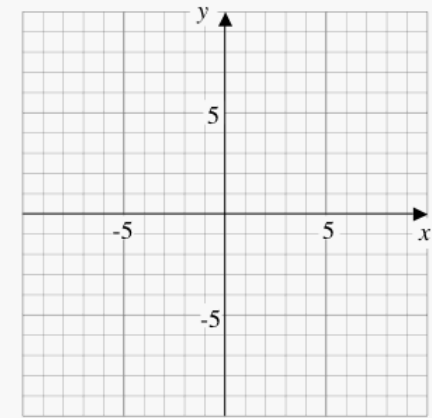
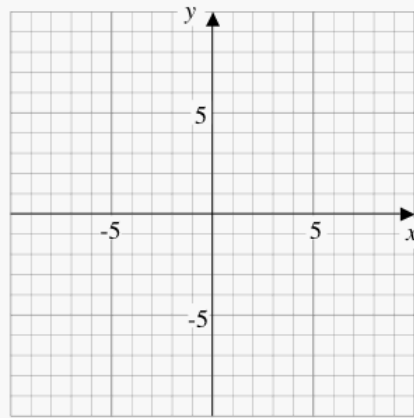
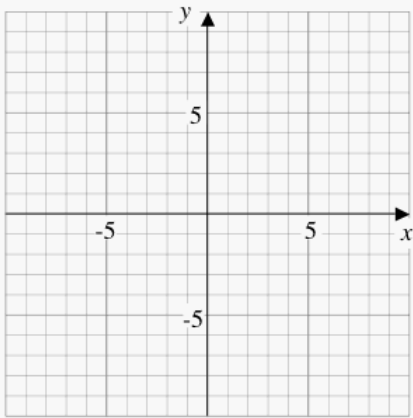
x	f(x)
-3	
-2	
-1	
0	
1	
2	
3	

$$f'(x) =$$

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

$$f''(x) =$$

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



4.

$$f(x) = x^3 - 5x + 2$$

x	f(x)
-3	
-2	
-1	
0	
1	
2	
3	

$$f'(x) =$$

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

$$f''(x) =$$

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