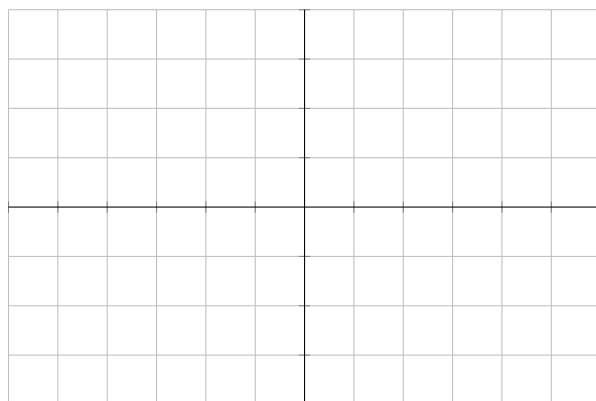
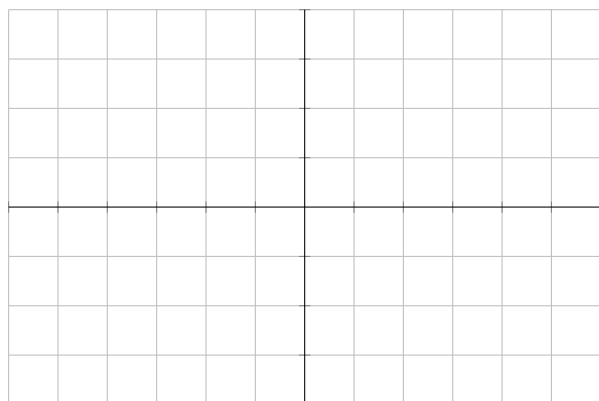
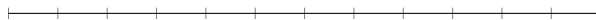
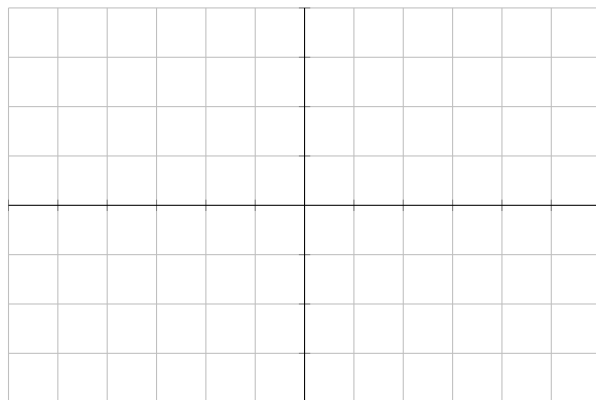
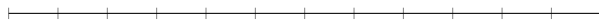
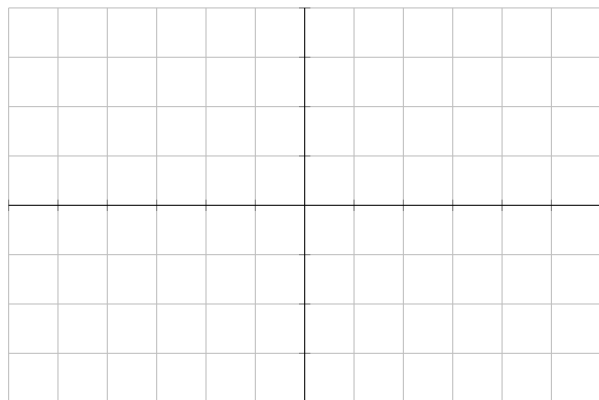
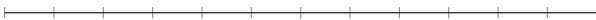
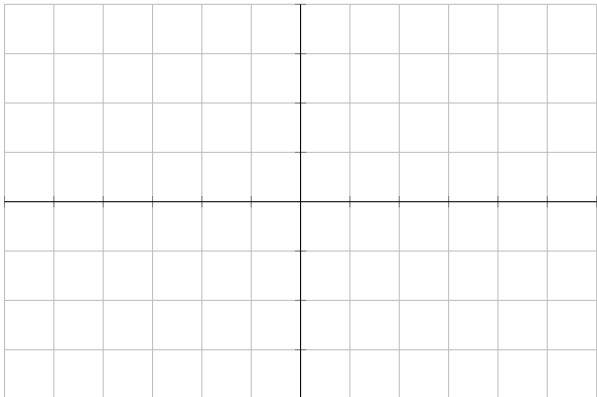
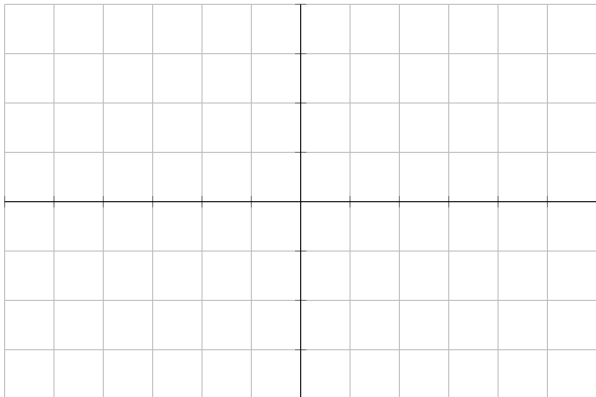
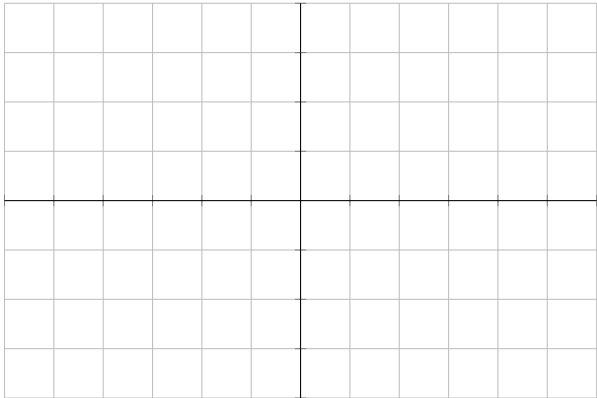
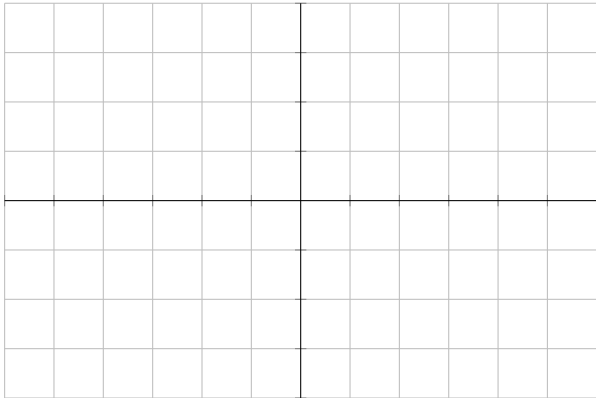


Highest and lowest points

For each of the graphs below:

1. Mark the very highest point and the very lowest point of $f(x)$.
2. Mark any points that are “locally” the highest or lowest.
3. On the number line below the graph, mark any x -values where $f'(x)$ would equal 0.
4. On the number line below the graph, mark any x -values where $f'(x)$ would not exist.
5. On the number line below the graph, highlight the intervals where $f'(x) < 0$.
6. In a different color, highlight the intervals where $f'(x) > 0$.





Now some questions for you:

- 1. What connections do you see between the highest and lowest points you marked on the graph and the locations you marked on the number line?
- 2. What connections do you see between the highlights you made on the number line and the x -values where either $f'(x) = 0$ or $f'(x)$ does not exist?
- 3. Which blank boxes can you fill in in the table below?

$f(x)$	Positive	Negative				
$f'(x)$			Positive	Negative		
$f''(x)$					Positive	Negative