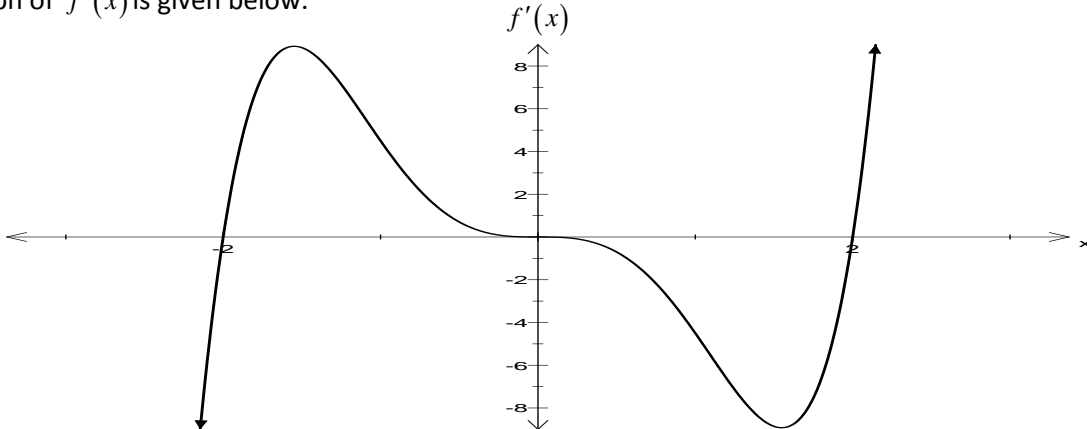


AP Calculus
3.2 – First Derivative Test

1. The graph of $f'(x)$ is given below.



Determine each of the following characteristics of $f(x)$ and justify your answers.

a. Interval(s) on which $f(x)$ is increasing.

b. Interval(s) on which $f(x)$ is decreasing.

c. x -coordinate(s) of all local max.

d. x -coordinate(s) of all local min.

2. The table below gives selected values of a continuous and differentiable function f and its derivative.

x	-5	-4	-3	-2	-1	0	1	2	3	4
$f(x)$	2	6	8	6	-1	-7	-9	-10	-11	-9
$f'(x)$	7	3	0	-2	-5	0	-4	-2	u/d	3

Determine each of the following characteristics of $f(x)$ and justify your answers.

- Interval(s) on which $f(x)$ is increasing.
- Interval(s) on which $f(x)$ is decreasing.
- x -coordinate(s) of all local max.
- x -coordinate(s) of all local min.
- Describe the shape of the graph of f near $x=0$.
- Describe the shape of the graph at $x=3$.