DATE: $\qquad$

| $x$ | -1 | $-1<x<0$ | 0 | $0<x<1$ | 1 | $1<x<2$ | 2 | $2<x<3$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $f(x)$ | 0 | Positive | 2 | Positive | 3 | Negative | 0 | Negative |
| $f^{\prime}(x)$ | 2 | Positive | 1 | Positive | 0 | Negative | -1 | Negative |
| $f^{\prime \prime}(x)$ | 1 | Positive | 0 | Negative | -1 | Negative | 0 | Positive |

$f(x)$ is defined on $[-1,3)$ in the chart above. Use the information to answer the following:
Where is $f$ increasing? Why?

Where is $f$ decreasing? Why?

Where does $f$ have a relative maximum? Why?

Where does $f$ have a relative minimum? Why?

Where is $f$ concave up? Why?

Where is $f$ concave down? Why?

Where does $f$ have an inflection point? Why?

