Given the graph of $f(x)$, go to the table below:


FIRST: Complete column 2.

| $\begin{aligned} & f(x) \text { at } x \\ & \text { I - do first } \\ & \text { II- do second } \\ & \text { III - do third } \\ & \text { IV - do 4th } \\ & \text { for column } 1 \end{aligned}$ | COLUMN 2: <br> Discuss the sign of $f^{\prime}(x)$ and what this tells you about the behavior of $f(x)$. <br> When applicable, include conclusions about any points being maximum, minimum or terrace points and why. | COLUMN 3: <br> Discuss the sign of $f^{\prime \prime}(x)$ and what this tells you about the behavior of $f(x)$ <br> When applicable, include a conclusion about any points being inflection points and why. |
| :---: | :---: | :---: |
| $\begin{gathered} f(x) \\ \text { at } x=-2 \end{gathered}$ |  |  |
| $\begin{gathered} f(x) \\ \text { III } \begin{array}{c} \text { at } x=-1 \end{array} \end{gathered}$ |  |  |
| $\begin{gathered} f(x) \\ \text { at } x=0.5 \end{gathered}$ |  |  |
| $\begin{gathered} f(x) \\ \text { at } x=1.3 \end{gathered}$ |  |  |
| $\begin{gathered} f(x) \\ \text { at } x=2 \end{gathered}$ |  |  |
| $\begin{gathered} f(x) \\ \text { at } x=3 \end{gathered}$ |  |  |
| $\begin{gathered} f(x) \\ \text { at } x=3.5 \end{gathered}$ |  |  |
| $\text { Iv } \begin{gathered} f(x) \\ \text { at } x=4.2 \end{gathered}$ |  |  |
| $\begin{gathered} f(x) \\ \text { at } x=5 \end{gathered}$ |  |  |
| $\begin{gathered} f(x) \\ \text { at } x=6 \end{gathered}$ |  |  |
| Sketch the indicated graph. | SECOND: On the graph above left, sketch the graph of the second derivative $f$ " $(x)$ and then complete column 3. | FOURTH: On the graph above right, sketch the graph of the function $f(x)$ based on the known behavior of $f(x)$ from the derivatives $f^{\prime}(x) \& f^{\prime \prime}(x)$ |

