1. Which graph is the function and which graph is the derivative? Carefully justify your choice. Use included sketch page to show work and justify choice

2. The following is a graph of a function $f(x)$. Use the included sketch page to show work.
(i) Identify any local maximums or minimums of $f(x)$
(ii) Write down the intervals for which $f(x)$ is concave up and for which intervals $f(x)$ is concave down.
(iii) Carefully sketch a graph of the derivative. Be as accurate as possible.

3. Identify as many relationships as possible between the following graphs. Explain your responses using key terms (e.g. increasing/decreasing, concave up/down, local max/min, etc.). Mark points on the graphs that correspond with your explanation. A sketch page is provided to show your work. Include information on the function / derivative relationship between the graphs.


4. The HW \#4 graph is the function and the coordinates of five points on this graph are included here. Use the sketch page and sketch the graph of the derivative of this function on the same axes. Carefully mark all key points on the graphs and/or axes and explain your work. Use key terms in your explanations. Label your curves $f(x)$ and $f^{\prime}(x)$. Use the data points and be accurate when sketching $f^{\prime}(x)$ !

5. The HW \#5 graph is the function. This function changes concavity six times. Points where a function changes concavity are called inflection points (IP). The inflection points for this function are marked on the graph. Use the sketch page and sketch the graph of the derivative of this function on the same axes. Carefully mark all key points on the graphs and/or axes and explain your work. Use key terms in your explanations. Label your curves $f(x)$ and $f^{\prime}(x)$


## Topic 8 Graph Page for Problem 1




## Topic 8 Graph Page for Problem 3






Topic 8 Graph Page for Problem 4


Topic 8 Graph Page for Problem 5


