AP Calculus Derivative Graphs Review/Extra Practice

1. Given the graph of $f'(x)$:
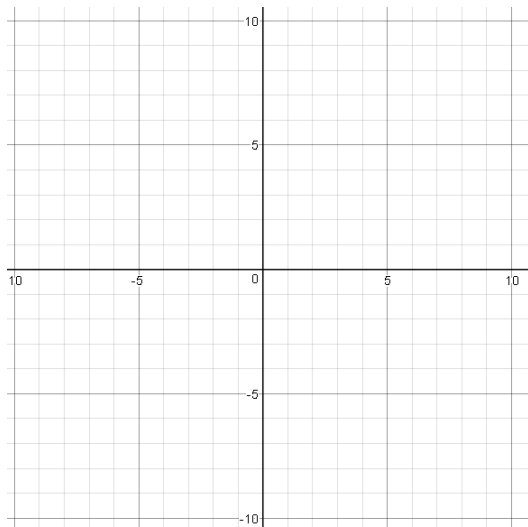
a) State the intervals where f(x) is increasing and decreasing.

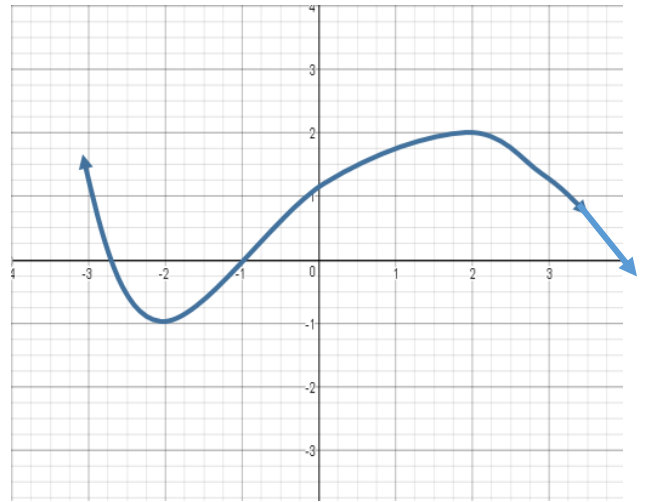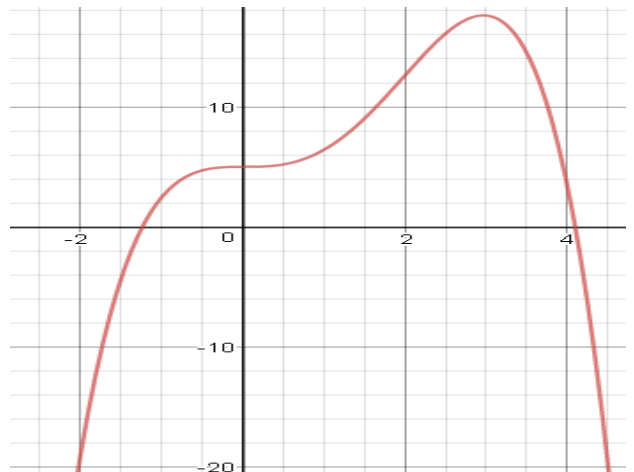b) State the x-coordinates of any local extrema of $f(x)$ and indicate if these are relative max/min.

c) State the intervals of concavity of $f(x)$.

d) State the x-coordinates of any points of inflection of $f(x)$.

e) Sketch a possible graph of $f(x)$.

2. Use the graph of f shown to estimate the value(s) of c that satisfy the conclusion of the mean value theorem on [-2, 4].

3. The figure below shows the graph of f' , the derivative of the function f, on the closed interval -4 ≤ x ≤ 4. The graph of f' has horizontal tangents at x = -2, 0, ½ , and 2. The function f is twice differentiable with $f(-1) = 3$.
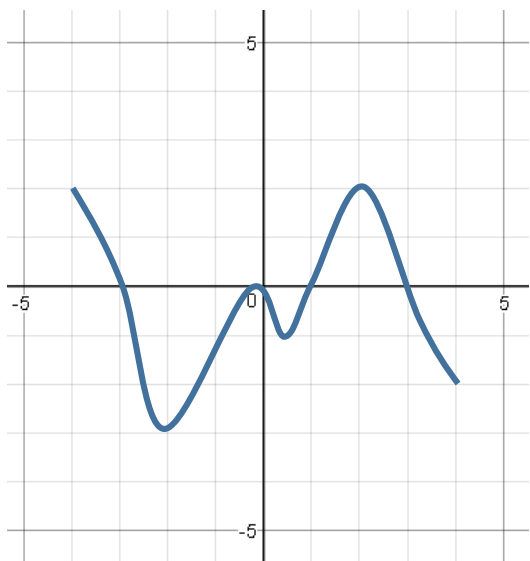
a) Find the x-coordinate of each local minimum/maximum of the graph of f. Justify your answer.

b) Find the x-coordinate of each of the points of inflection of the graph of f. Justify your answer.

c) Find all the intervals on which the graph of f is concave up and also has a negative slope.

d) For -4 ≤ x ≤ 4, sketch a possible graph of f on the axes.