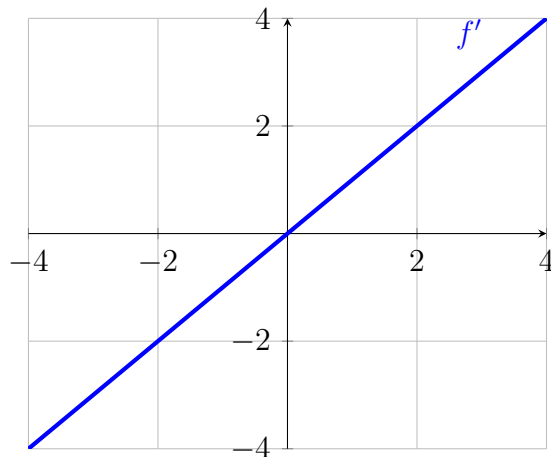


Lecture 20: Graphical Interpretation of the Derivative

Goal: Recover information about a function f from the graph of f' .

1 Implementing the I/D and 1st Derivative Test

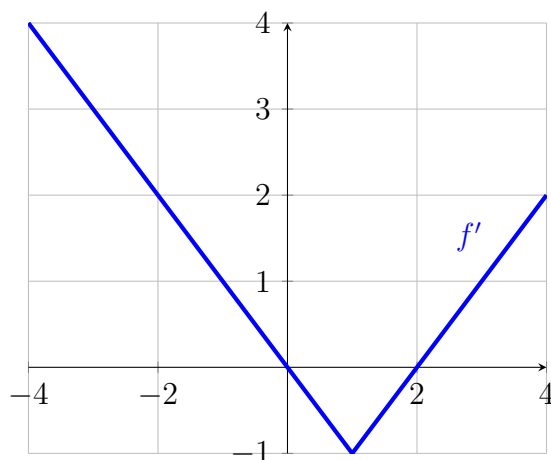
Problem 1. Use the graph of f' to determine the following about f :



(a) Intervals of increase/decrease

(b) Positions of relative max/mins

Problem 2. Use the graph of f' to determine the following about f :

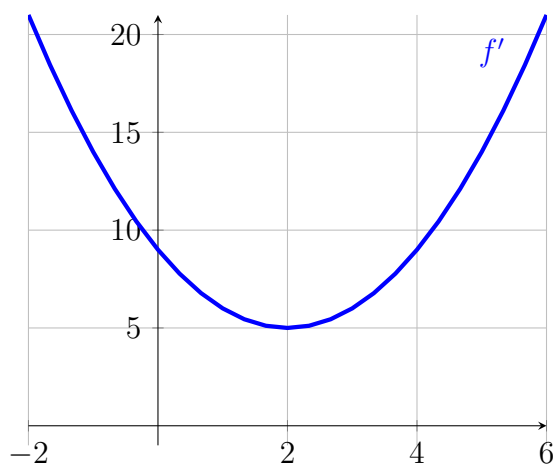


(a) Intervals of increase/decrease

(b) Positions of relative max/mins

2 Implementing the Concavity and 2nd Derivative Test

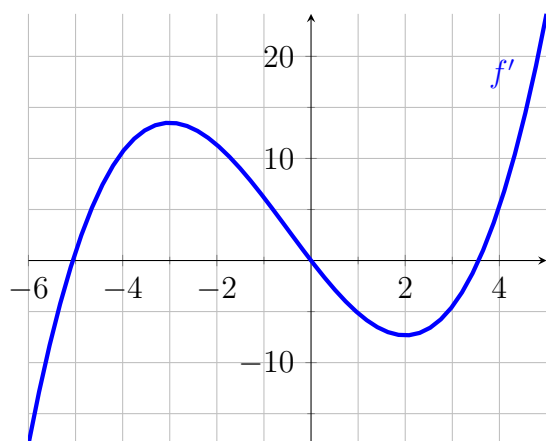
Problem 3. Use the graph of f' to determine the following about f :



(a) When f is concave up VS. concave down

(b) Position of any inflection points

Problem 4. Use the graph of f' to determine the following about f :

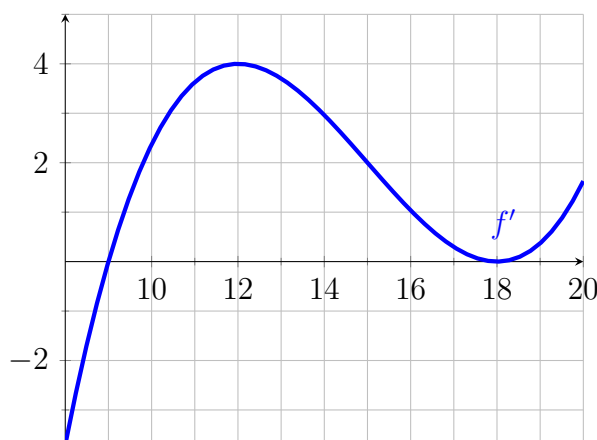


(a) When f is concave up VS. concave down

(b) Position of any inflection points

3 Putting Everything Together

Problem 5. Use the graph of f' to determine the following about f :

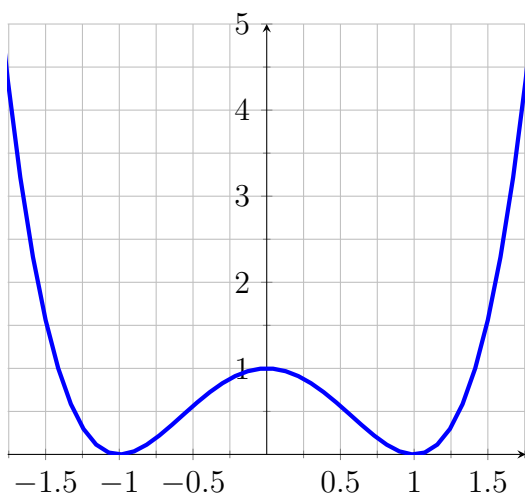


(a) Intervals of Increase/Decrease

(b) When f is concave up VS concave down

(c) State the locations of any relative max/mins as well as inflection points

Problem 6. Use the graph of f' to determine the following about f :

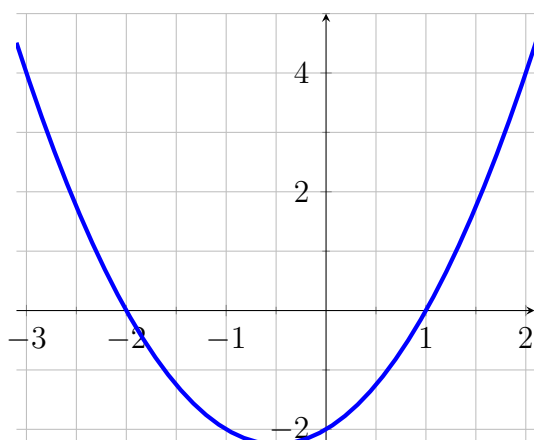


(a) Intervals of Increase/Decrease

(b) When f is concave up VS concave down

(c) State the locations of any relative max/mins as well as inflection points

Problem 7. Use the graph of f' to determine the following about f :

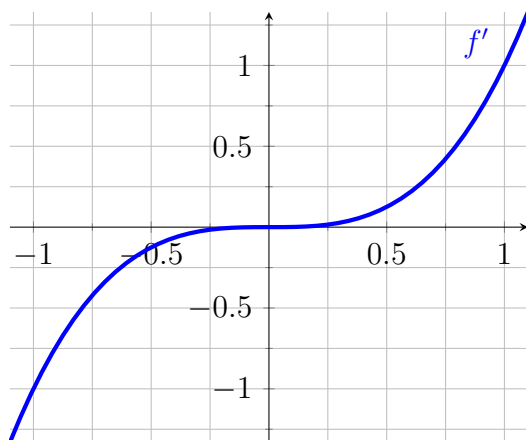


(a) Intervals of Increase/Decrease

(b) When f is concave up VS concave down

(c) State the locations of any relative max/mins as well as inflection points

Problem 8. Use the graph of f' to determine the following about f :

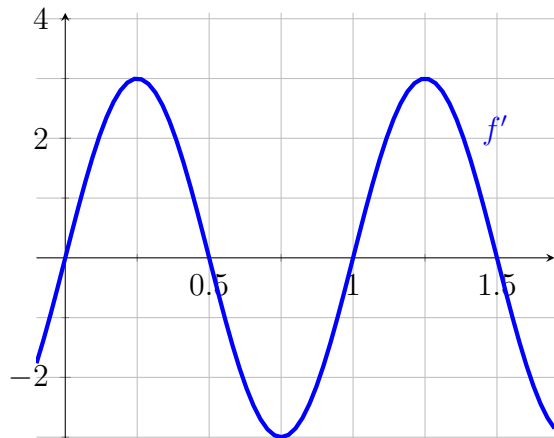


(a) Intervals of Increase/Decrease

(b) When f is concave up VS concave down

(c) State the locations of any relative max/mins as well as inflection points

Problem 9. Use the graph of f' to determine the following about f :



(a) Intervals of Increase/Decrease

(b) When f is concave up VS concave down

(c) State the locations of any relative max/mins as well as inflection points