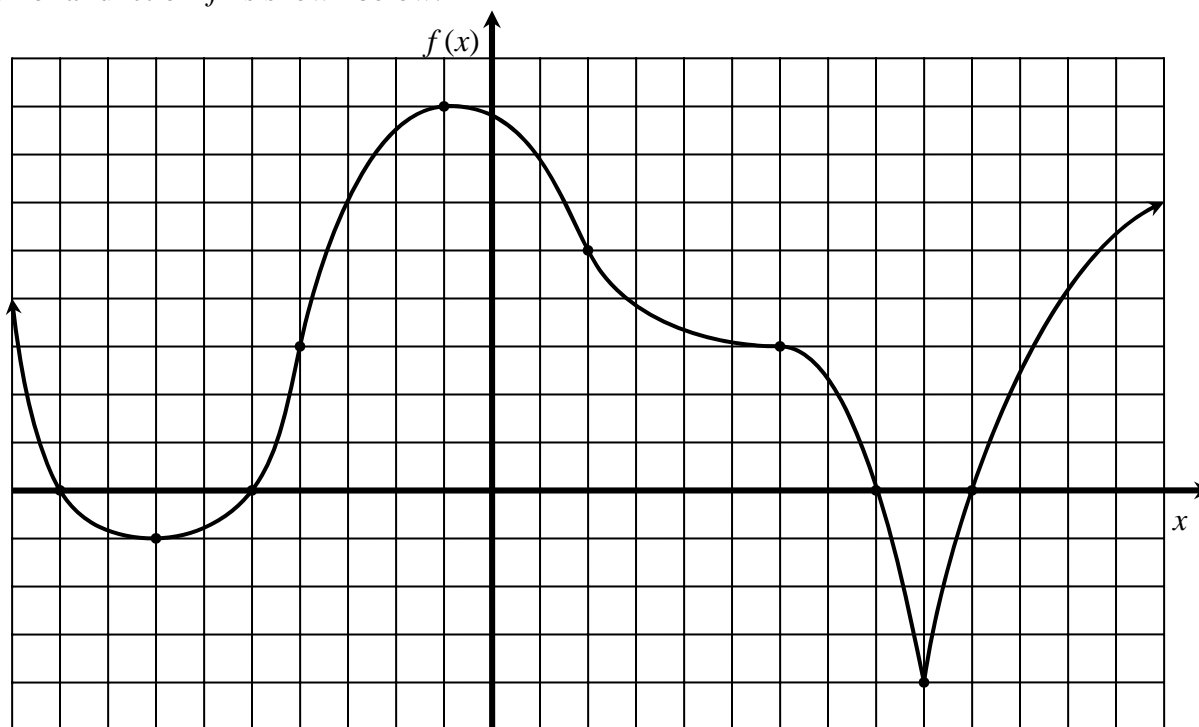


Math 163A Class Drill 7: Derivatives and the Shape of Graphs
Part 1: Identifying three kinds of graph behavior

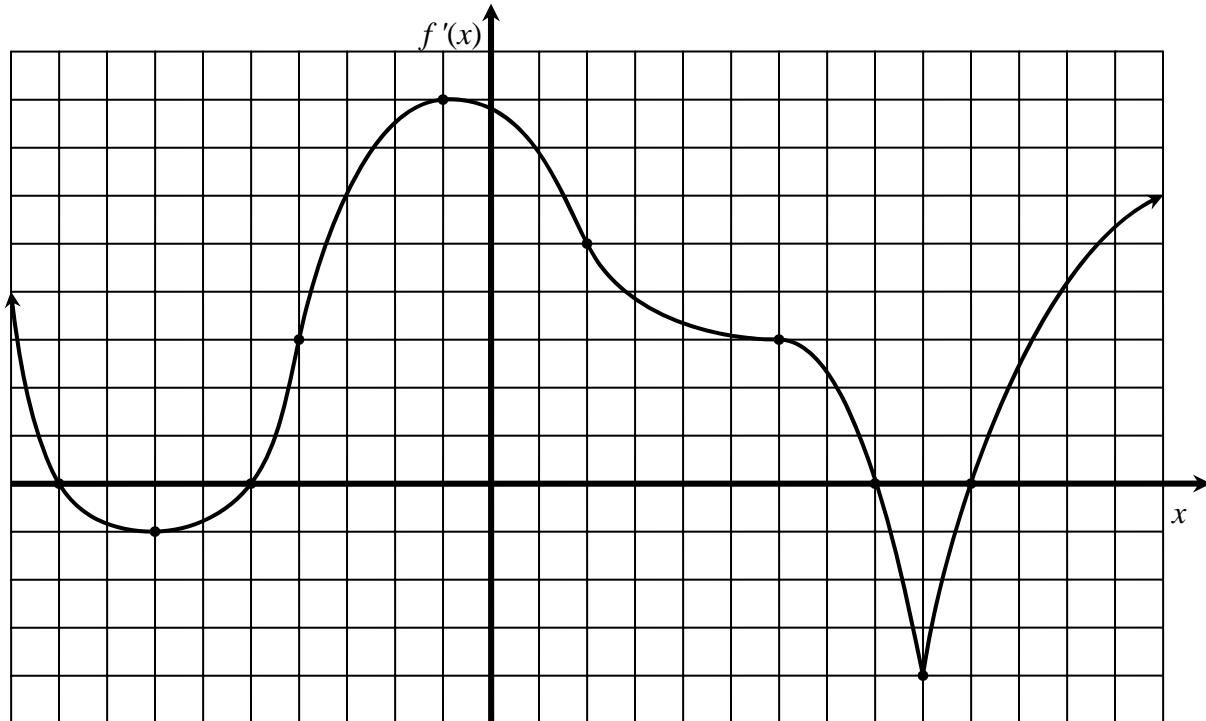
The graph of a function f is shown below.



- 1) At which x -values is f zero?
- 2) On what intervals is f positive?
- 3) On what intervals is f negative?
- 4) At which x -values is the line tangent to the graph of f horizontal?
- 5) On what intervals is f increasing?
- 6) On what intervals is f decreasing?
- 7) At which x -values is f not concave?
- 8) On what intervals is f concave up?
- 9) On what intervals is f concave down?

Part 2: Using a graph of f' to answer questions about f

The graph of f' is shown below. (Note: this is not the graph of f !)



- 1) At which x -values is f zero? (Trick question)
- 2) On what intervals is f positive? (Trick question)
- 3) On what intervals is f negative? (Trick question)
- 4) At which x -values is the line tangent to the graph of f horizontal?
- 5) On what intervals is f increasing?
- 6) On what intervals is f decreasing?
- 7) At which x -values is f not concave?
- 8) On what intervals is f concave up?
- 9) On what intervals is f concave down?
- 10) At which x -values does f have a local max?
- 11) At which x -values does f have a local min?
- 12) At which x -values does f have a point of inflection?