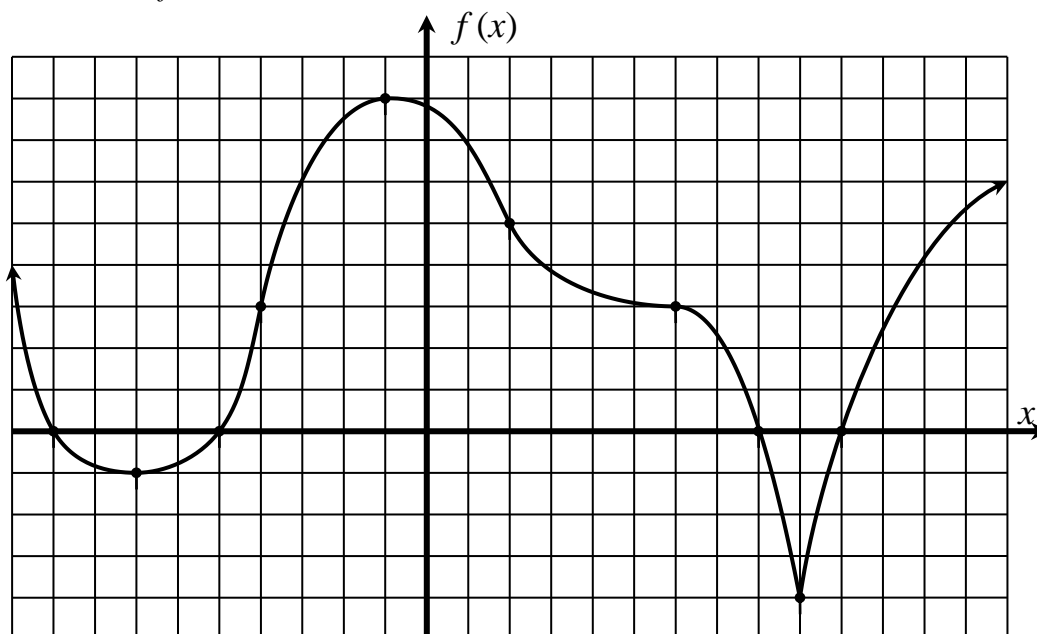


Class Drill 12: Derivatives and the Shape of Graphs
Part 1: Identifying three kinds of graph behavior

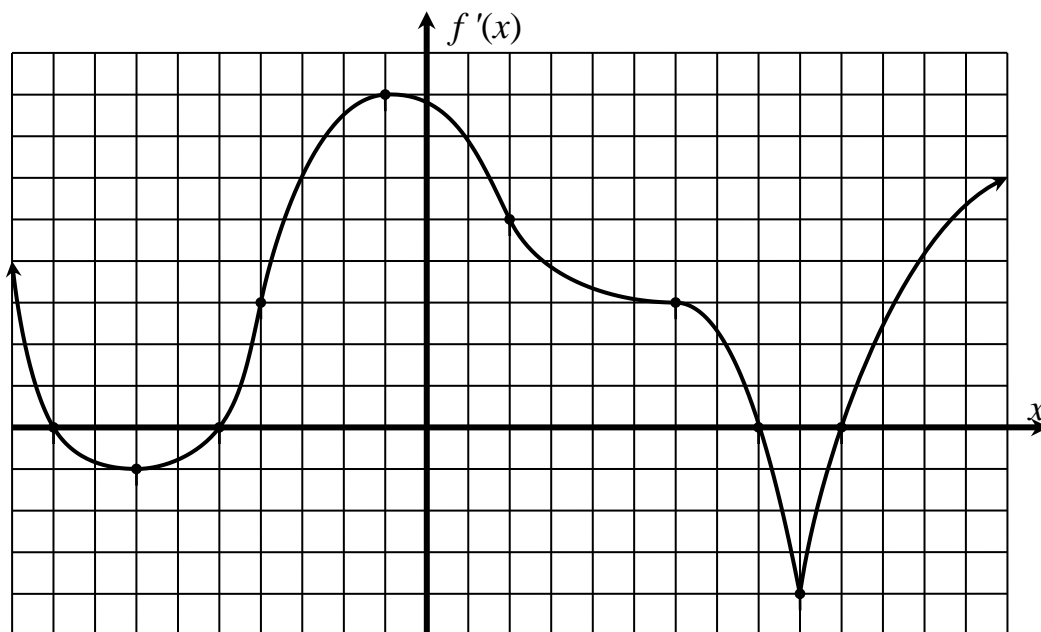
The graph of a function f is shown below.



- (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) On what intervals is f concave up?
- (8) On what intervals is f concave down?
- (9) At which x -values is f not concave?
- (10) At which x -values does f have a point of inflection?

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 does f have a local max?
- (8) At which x -values does f have a local min?
- (9) On what intervals is f concave up?
- (10) On what intervals is f concave down?
- (11) At which x -values does f have a point of inflection?