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?