Function Defined by Integral Dixie Ross
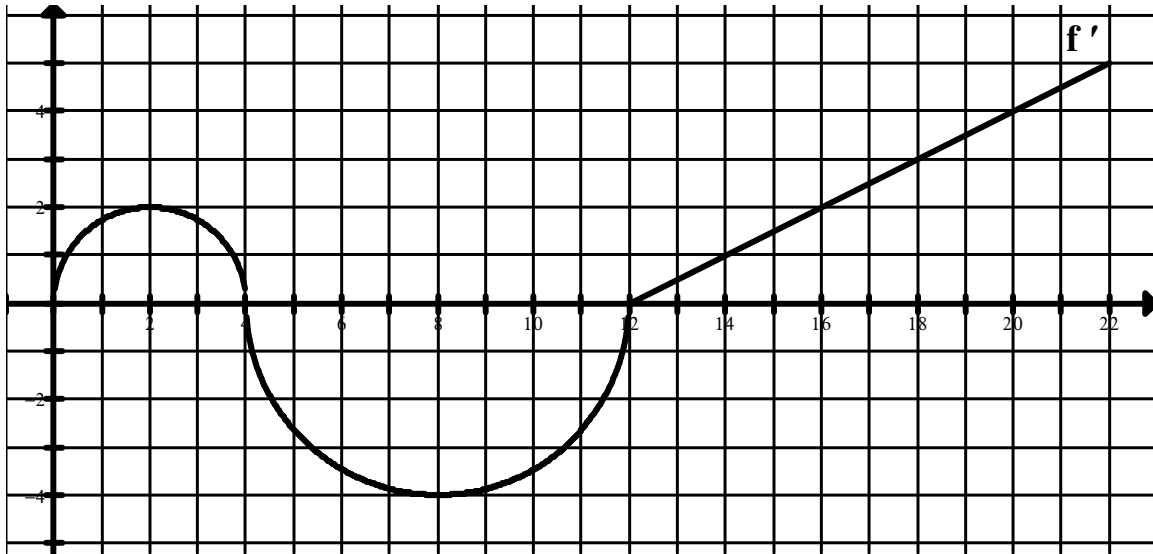
The graph below shows f ', the derivative of function f. The graph consists of two semi-circles and one line segment. Horizontal tangents are located at x = 2 and x = 8 and a vertical tangent is located at x = 4.

a) On what intervals is f increasing? Justify your answer.

b) For what values of x does f have a relative minimum? Justify.

c) On what intervals is f concave up? Justify.

d) For what values of x is f ″ undefined?

e) Identify the x-coordinates for all points of inflection of f.

f) For what value of x does f reach its maximum value? Justify.

g) If f (4) = 5, find f(12).

h)