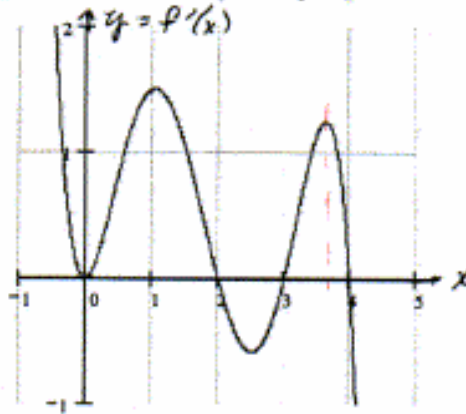(5.) (14 pts) The graph in the figure below is the graph of $f'(x)$ (*i.e.*, the graph of the **derivative** of f). [Note: all questions refer to f, not f'.]

Graph of the derivative of f

(a) Determine *all* values of x for which:

(i) f has critical point(s)

$x = 0, 2, 3, 4$

(ii) f has local maximum(s)

$x = 2, \quad x = 4$

(iii) f has local minimum(s)

$x = 3$

(iv) f has inflection point(s)

$x = 0, 1, 2.5, 3.7$

(b) Give one interval over which f is concave down.

[accept any interval over which f' is decreasing.]

eg: $1 < x < 2$, $1 < x < 2.5$, $-0.5 < x < 0$, $3.7 < x$ etc....

(c) Give the largest interval over which f is increasing.

$x < 2$ or $(-\infty, 2)$

Note: due to allowable interpretations, will accept:
$(-\infty, 2)$
$(-0.5, 2)$
or $(0, 2)$