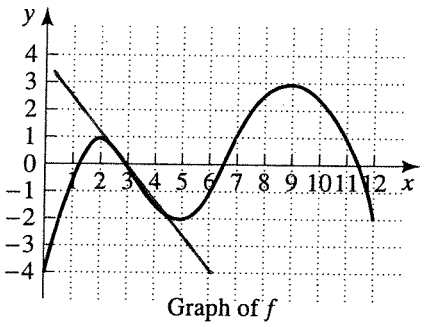
2.4
#40



Graph of f

(a) $f'(x) > 0$ when x is between 0 and 2 (function is increasing)
when x is between 5 and 9

(b) $f'(x) < 0$ when x is between 2 and 5 (function is decreasing)
when x is between 9 and 12

(c) $f'(x) = 0$ when $x = 2$ or $x = 5$ or $x = 9$ (tangent is horizontal)

(d) I have sketched the tangent to the curve at the point where $x = 3$. The slope of that tangent line is negative; so $f'(3)$ is probably closest to -1.5.