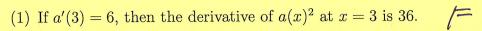
DERIVATIVES REVIEW: TRUE OR FALSE? JUSTIFY. SIDE A



(2) The function $b(x) = |x^3|$ is differentiable at x = 0.

(3) If c(x) is a function and c'(10) = 38, then the derivative of c(5x) at x = 2 is 38.

(4) The function $d(x) = x^3 - 3x + 5$ has no maximum value on (-4, -2).

(5) If e(x) is differentiable at x = 2 and f(x) is differentiable at x = 2, then $(e \circ f)(x)$ is differentiable at x = 2.

(6) If g'(5) = -1, then g(5.001) < g(5).

(7) If h(x) has a local maximum at x = 7 (meaning that there is some $\delta > 0$ such that $h(7) \ge h(x)$ for all $x \in (7 - \delta, 7 + \delta)$) and h is differentiable at 7 then h'(7) = 0.

(8) If i'(7) = 0 then i(x) has a local maximum at x = 7 (meaning that there is some $\delta > 0$ such that $i(7) \ge i(x)$ for all $x \in (7 - \delta, 7 + \delta)$).

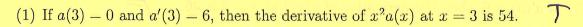
(9) If j'(5) = 0, then there is some $\delta > 0$ such that j(x) = j(5) for all $x \in (5 - \delta, 5 + \delta)$.

(10) If k(x) is increasing on the interval (-3,2), then k is differentiable on (-3,2) and $k'(x) \ge 0$ on (-3,2).

(11) If $\ell(x)$ is continuous at x = 0, then $x^2 \ell(x)$ is differentiable at x = 0.

(12) If m'(r) > 0 and m''(r) exists (meaning the function m'(x) is differentiable at x = r), then m is increasing on some interval containing r.

DERIVATIVES REVIEW: TRUE OR FALSE? JUSTIFY. SIDE B



(2) The function
$$b(x) = |x^3 - x|$$
 is differentiable at $x = 0$.

(3) The function
$$c(x) = -3x^5 + 4x^4 + 3x^2 - 6x$$
 is increasing on some open interval 7 containing $x = 1$.

(4) The function
$$d(x) = x^3 - 3x + 5$$
 has no maximum value on $[-4, -2]$.

(5) If
$$e(x)$$
 is differentiable at $x = 2$ and $f(x)$ is differentiable at $x = 2$, then $(ef)(x)$ is differentiable at $x = 2$.

(6) If
$$g'(5) = -1$$
, then $g(5.00...01) < g(5)$ if there are enough zeroes in the middle.

(7) If
$$h(x)$$
 has a local maximum at $x = 7$ (meaning that there is some $\delta > 0$ such that $h(7) \ge h(x)$ for all $x \in (7 - \delta, 7 + \delta)$), then $h'(7) = 0$.

(8) If
$$j'(-1) = 1$$
 and $(i/j)(x)$ is not differentiable at $x = -1$, then $i(x)$ is not differentiable at $x = -1$.

- (9) If k is not increasing on some interval I then there is some subinterval $J \subseteq I$ such that k is strictly decreasing on J.
- (10) If $\ell(x)$ is defined at x = 0, then $x^2 \ell(x)$ is differentiable at x = 0.

(11) If
$$m'(r) = 0$$
 and $m''(r) < 0$, then $m(x)$ has a local maximum at $x = r$ (meaning that there is some $\delta > 0$ such that $m(r) \ge m(x)$ for all $x \in (r - \delta, r + \delta)$).

(12) If n(x) is continuous at x = 2, then n(x) is differentiable at x = 2.