16. If the equation **(2005)**

$a_n x^n + a_{n-1} x^{n-1} + ... + a_1 x = 0, a_1 \neq 0, n \geq 2,$

has a positive root $x = \alpha$, then the equation

$na_n x^{n-1} + (n-1)a_{n-1} x^{n-2} + ... + a_1 = 0$ **has a positive roots, which is**

1) greater than α 2) smaller than α

3) greater than or equal to α

4) equal to α

Ans.

(2) $f(0) = 0, f(\alpha) = 0$ and $f(0)$ is continous on $[0,\alpha]$ and differentiable on $(0,\alpha)$

$\Rightarrow f'(k) = 0$ for some $k \in (0,\alpha)$.