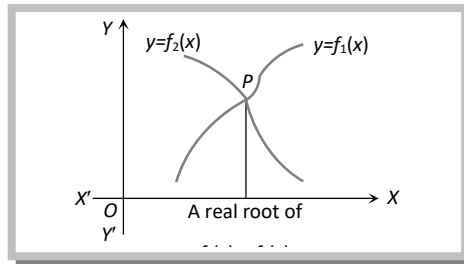


Location of real Roots of an Equation.

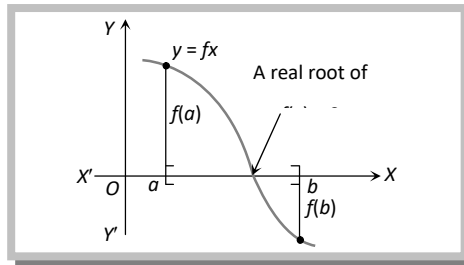
By location of a real root of an equation, we mean finding an approximate value of the root graphically or otherwise.

(1) **Graphical Method:**It is often possible to write $f(x) = 0$ in the form $f_1(x) = f_2(x)$ and then plot the graphs of the functions $y = f_1(x)$ and $y = f_2(x)$.



The abscissae of the points of intersection of these two graphs are the real roots of $f(x) = 0$.

(2) **Location Theorem:**Let $y = f(x)$ be a real-valued, continuous function defined on $[a, b]$. If $f(a)$ and $f(b)$



have opposite signs i.e. $f(a) \cdot f(b) < 0$, then the equation $f(x) = 0$ has at least one real root between a and b .