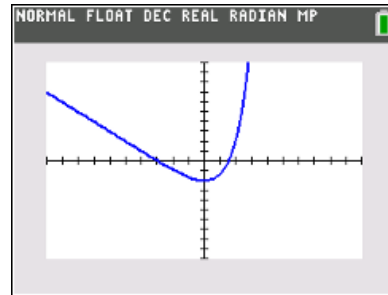# Summary on Inequalities:

**1.    Graphical method – if question says no need exact or algebraic method.**

Solve $e^x > x + 3$.

$e^x - x - 3 > 0$

Sketch $y = e^x - x - 3$ and find the zeros.

Ans: $x < -2.95$  or  $x > 1.51$.



**2.    Algebraic method**

Solve $f(x) > g(x)$.

(1) First move all terms to one side, i.e. $f(x) - g(x) > 0$.

(2) Combine LHS into one algebraic fraction.

(3) Factorize the numerator and denominator whenever possible.

(4) Draw up a number line to alternate the sign or use graph.

   **\*The sign does not alternate when there is a repeated root.**