

1. This is FALSE, since a function can have any number of global minima or maxima. Consider, for example $\cos(x)$: This function has global minima ($f = -1$) at $x = \pi, 3\pi, 5\pi$ etc.)
2. This is also FALSE. It is true that local optima occur where $f'(x) = 0$, but they can also occur at points where $f'(x)$ does not exist.
3. The feasible set is the set of all points that fulfil the constraints.