Interval Analysis of Fully-Connected Neural Networks

1) $f(x_1) = 0.5, f(x_2) = 0.5$
2) $f([1,2]) = [0.5, 0.5]$
3) $f([1,2]) = [0.25, 0.75]$
4) Yes (for example, 0.25)
5) No (because 0.25 is a possible output that is smaller than 0.5)
Bigger Example

1) \( f([0.2, 0.3]) = [0.3708, 0.3912] \)

\[ f([1, 1.3]) = [0.2044, 0.2712] \]

2) No