Curve Fitter

Part 1
Can you find a cubic which passes through $(0,0)$ and the points $(1,2)$ and $(2,1)$?
Can you find more than one possible cubic?

Part 2 (a)
Can you find a cubic which passes through $(0,0)$ and the points $(1,2)$ and $(2,1)$, and where the point $(1,2)$ is a turning point of the cubic?
Can you find more than one cubic satisfying all the conditions?

Part 2 (b)
Can you find a cubic which passes through $(0,0)$ and the points $(1,2)$ and $(2,1)$, and where the point $(2,1)$ is a turning point of the cubic?
Can you find more than one cubic satisfying all the conditions?

Part 3
Can you find a cubic which passes through $(0,0)$ and where the points $(1,2)$ and $(2,1)$ are both turning points?

If not, why not? Can you prove that it is impossible?