## Summary of lecture 6 - Classifying Critical points

- Sometimes the "sufficiently close" part of the first principles definition is vital
- For example, suppose that

$$\Delta(h,k) = h^2 + k^2 - hk^2 = h^2 + k^2(1-h).$$

shows that it is positive for all  $(h, k) \neq (0, 0)$  for h < 1. So, it is positive for all (h, k) sufficiently close to (0, 0).

• A function can have many critical points. So double check you have found them all.