

Nature OF Stationary Points (summary)

- at stationary points determine f_{xx} , f_{yy} & f_{xy}

- Determine the discriminant D

- Find critical points

$$D = f_{xx}f_{yy} - (f_{xy})^2$$

- IF

$D > 0$ & $f_{xx} > 0 \Rightarrow$ Local minimum

- IF $D > 0$ & $f_{xx} < 0 \Rightarrow$ Local Maximum

- IF $D < 0 \Rightarrow$ Saddle points

- IF $D = 0 \Rightarrow$ inconclusive