

$$f_x = 3x^2 - 18$$

$$\nabla f = \lambda \nabla g$$

$$f_y = 3y^2 - 48$$

$$g(x) = 0.$$

$$f_{xx} = 6x - 18$$

$$f_{xy} = 0$$

$$f_{yx} = 6y$$

$$\begin{matrix} f_{xx} & f_{xy} \\ f_{yx} & f_{yy} \end{matrix}$$

$$D = 6x(6y - 18)$$

$$f_{xxx} = 6$$

$$(0, -4)$$

$$f_{xyy} = 6$$

A B (6, 4) C

A C B

B A C

B L A

C A B

C B A

$(0, 4)$ - 136 Saddle. - 135. Pf 1

$(0, -4)$ No Max. - (25, 8)

$(0, 4)$ - 244

$(0, -4)$ 12.

,

$$f_x = 3x^2 - 18x$$

$$f_y = 3y^2 - 48$$

$$f_{xx} = 6x - 18$$

$$f_{xy} = 0$$

$$f_{yy} = 6y$$

$$D = \begin{bmatrix} 6x - 18 & 0 \\ 0 & 6y \end{bmatrix}$$

$$(0, 4): \begin{matrix} > 0 & f_{xx} < 0 \end{matrix}$$

$$(6, 4): \begin{matrix} > 0 & > 0 \end{matrix}$$

$$0, 4 < 0$$

$$f_x = x - 2$$

$$f_y = 21y^2 + 14y$$

$$x = 2$$

$$y = 0$$

$$y = -\frac{2}{3}$$

$$f_{xy} = 0$$

$$f_{xx} = 1$$

$$f_{yy} = 42y + 14$$

$$(2, 0)$$

$$(2, -\frac{2}{3})$$

$$(2, 0) > 0$$

$$> 0$$