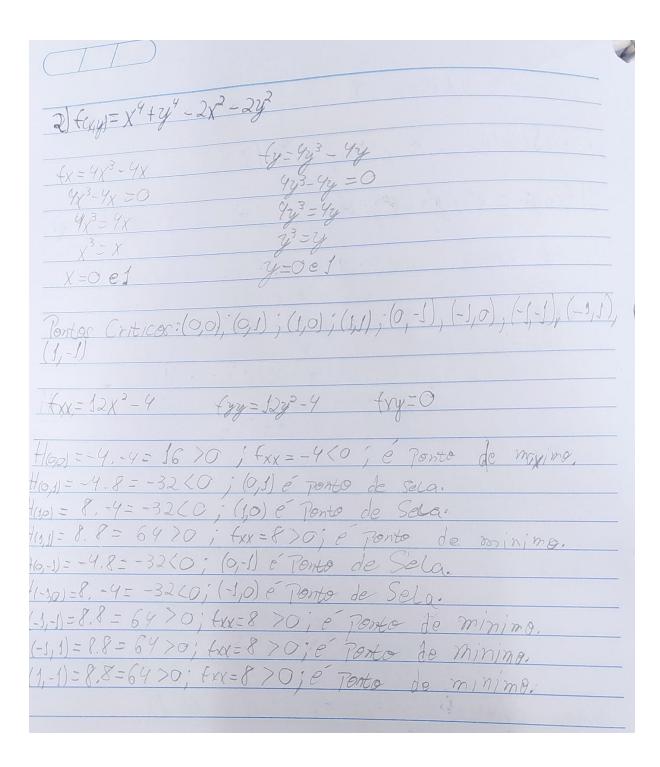
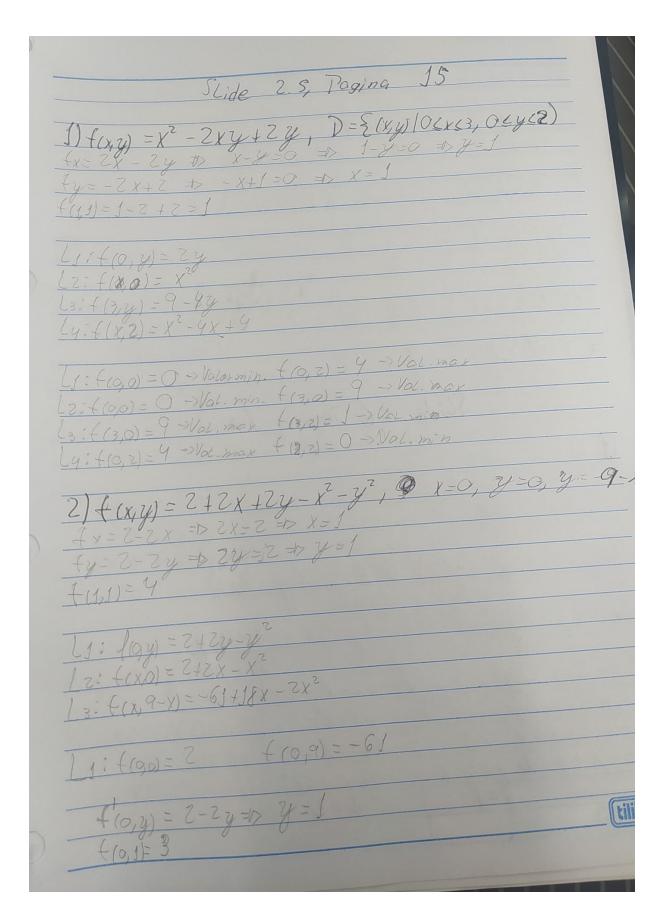
Lista 5 Stide 2.5, Pagina 13) (cx,y) = X2 + y2 + x2y + 4 X= 75% 021 fy=2y+x2 y=0 Pontos criticos: (0;0), (+2;-1) e (-10;1) tyy= 2 H(0,0) = 2.2 = 4 \$ (0,0) & ponto minima (H>O e fxx)0 H(va;-1) = 0 - (2. V2) = - (2721) => (va;-1) = (H ×0) **(tilibra)** H(-12;1) = 4- (-2121)2 (0 =D (-12;1)e' ponto de sela (H60)

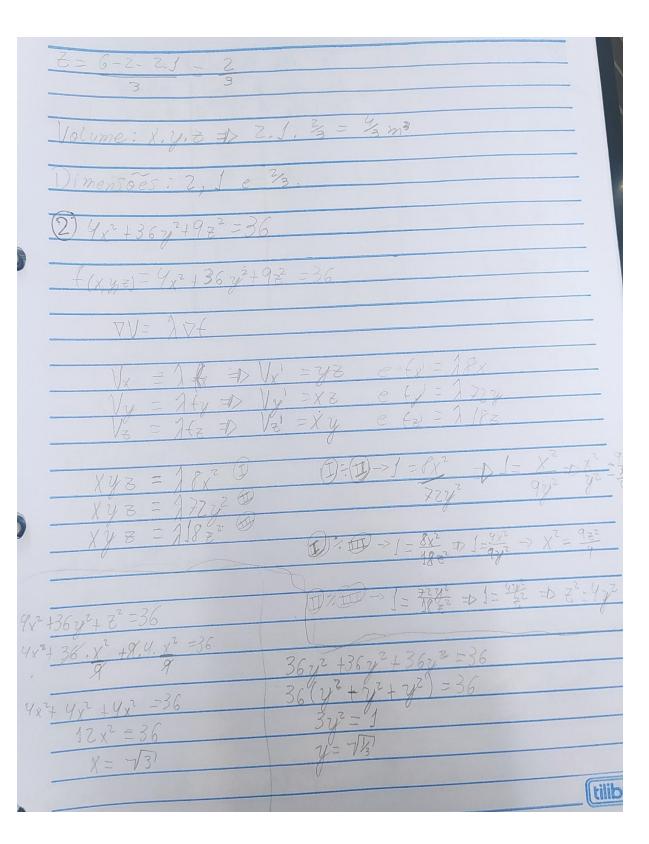


3) $((x,y) = (x^2 - y^2) \cdot e^{-(x^2 + y^2)}$ $+x=2x.e^{-(x^2+y^2)}+(x^2-y^2).e^{-(x^2+y^2)}$ fy=2y.e-(x3+y)+(x2-y2).e(x3+y),-y xe (x3), (2-x2+y3) 2-12+42 =0 $\frac{2-\chi^2 \neq 0=0}{\left(\chi = \pm \sqrt{2}\right)}$ Pontos Criticos: (0,-121), (0, 121), (721,0) & (-121,0) & (90) HG, 51) 20 ; Exx DO ; Porto de minimo ¡ Ponto de minimo H(0, 751) & G ; EXX >G H(15,0)70; fxx (0 i Ponto de moximo H(-VI),0)70; fxx (0 i Ponto de maximo H(0,0) - 4(0 -> Ponto de Sela

4) f(x,y) = x4 + y4 - 2(x-y) (x=9x3-4(x-y)=9x3-4x+4y = x3-x+y=0 = y=-x3+x (y= 4y3+4(x-y)=4y3+4x-4y Dy3+x-y-000 $+ (-X^3+x)^3 + X + X^3 - X = 0 = + (-X^3+x)^3 + X^3 = 0 = +$ $\Rightarrow (-\chi^3+2\chi), ((-\chi^2)+2, (-\chi^3), \chi+\chi^2)-((-\chi^4+\chi^2)+\chi^2)=0$ Dx3(-x2+2)(x3-x2+1)=0 =0 x3=0(=0 X= 7 X + 2 = 0 = 1 X = = + V21 =384)0 -> Ponto de Minimo



£9,01=-61 +(10)=3 L3: f(0,0) = -61 f(9,0) = -61 +(2; 2) = 2+2.9, +x.9, -(2) 2-(2) 2 => 2+9+9-81-84 D 4 + 38 + 36 - 81 - 81 = - 82 Stide 2.6, Pagina 17



33x + 2y + 3 - 14 = 0 | 3x = 16x = 32 = 32 = 22 = 2 9y = 26y = 2y = 22 = 2 = 2 $\frac{4(xyz) = 3x + 2y + z - 14 = 0}{9z} = \frac{1}{16z} = \frac{1}$