UFSCar – Cálculo 2. Prof. João C.V. Sampaio e Yolanda K S Furuya

Domínios de funções de duas variáveis

Determine e represente graficamente os domínios das funções. O domínio é aberto? Quais são os pontos de fronteira? Todos os pontos de fronteira estão no conjunto? Quais são os pontos de acumulação?

1. $f(x,y) = \sqrt{1-x-y}$.
2. $f(x,y) = \dfrac{x-y}{\sqrt{1-x^2-y^2}}$.
3. $f(x,y) = \sqrt{y-x^2} + \sqrt{2x-y}$.
4. $z = \ln(2x^2+y^2-1)$.
5. $z = \sqrt{x^2+y^2-4}$.
6. $g(x,y) = \sqrt{x^2-y^2}$.
7. $z = \dfrac{1}{\sqrt{1-xy}}$.
8. $\varphi(x,y) = \ln(x^2-xy)$.
9. $h(x,y) = \sqrt{2-x}$.

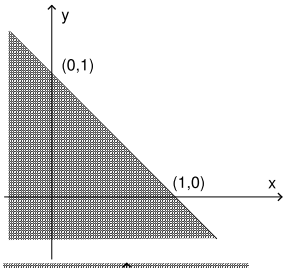
Gráficos de funções de duas variáveis

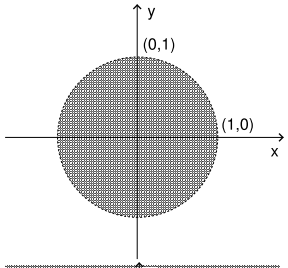
Esboce, em um sistema cartesiano ortogonal, os gráficos das seguintes funções. Utilize seus conhecimentos de secções com planos coordenados, curvas de nível, quádricas, planos. Quais gráficos são superfícies de revolução? Como parametrizar em função de r, θ das coordenadas polares do plano Oxy?

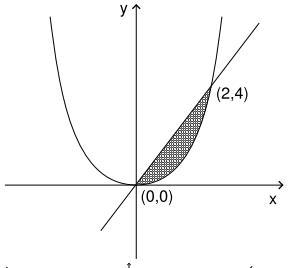
1. $f(x,y) = 1-x^2-y^2$.
2. $f(x,y) = x+2y$.
3. $f(x,y) = 1-x-\dfrac{y}{2}$.
4. $f(x,y) = \dfrac{1}{\sqrt{x^2+y^2}}$.
5. $f(x,y) = \operatorname{sen} x$.
6. $f(x,y) = \dfrac{y}{2}+1$.
7. $f(x,y) = -x+y+1$.
8. $h(x,y) = 1-\sqrt{x^2+y^2}$.

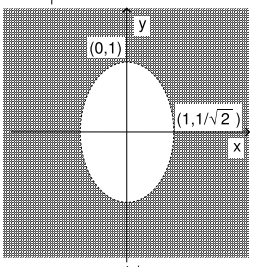
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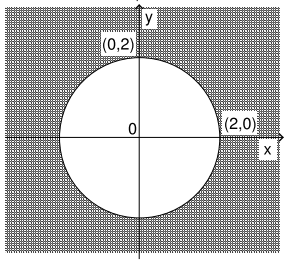
Domínios de funções de duas variáveis

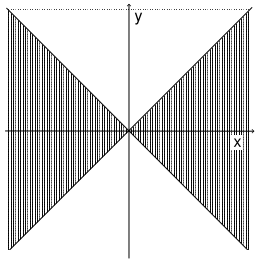
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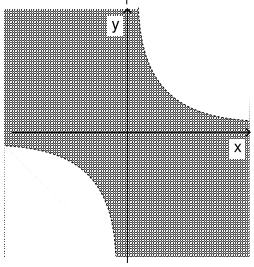
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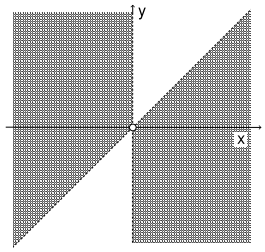
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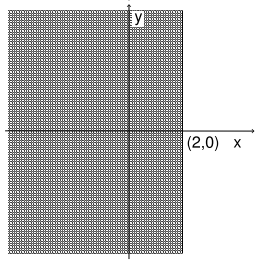
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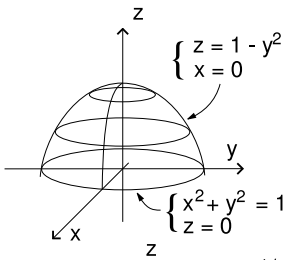
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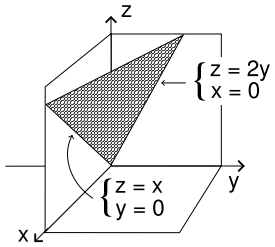
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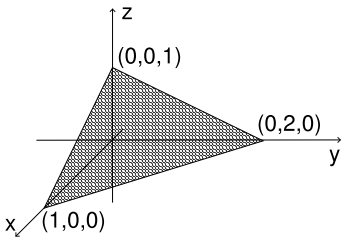
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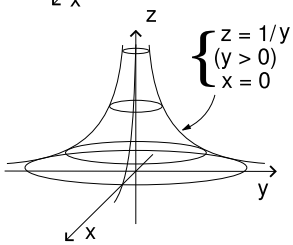
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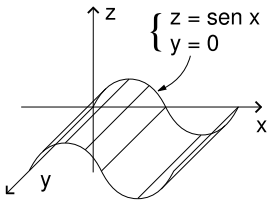
Gráficos de funções reais de duas variáveis

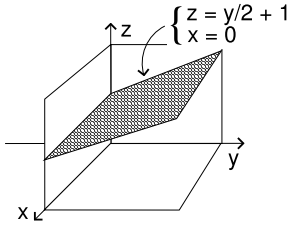
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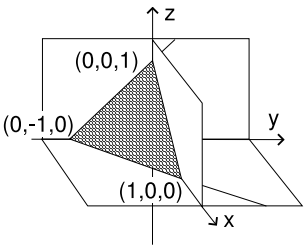
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