1. Use Lagrange multipliers to find the smallest value that x+y+z can be given that xyz = 125

Gradient f = <1,1,1>
Gradient g = <yz,xz,xy>
Gradient f = (lambda)gradient g
Set each x, y , z value equal to each other with lambda
(Lambda)yz = 1
(Lambda)xz = 1
(Lambda)xy = 1
x = y = z
f(5,5,5) = 15

2. Use Long-range multipliers to find the largest value that xyzzy can be given that x+y+z=15

Gradient f = <yz,xz,xy>
Gradient g = <1,1,1>
Same process as first problem, gradient f = gradient g * lambda
x = y = z
f(5,5,5) = 125