

Mathematics Review Course
Summer 2023
Problem Set 08

Ryan McWay

August 16th, 2023

Note: [Source] at the start of each problem denotes the source of the question. If there is no source, it is an original problem of my creation.

Homogeneity

1. What degree of homogeneity is $f(x, y) = 4x^2 + y^2$?
2. What degree of homogeneity is $f(x, y) = x^3 + y^2$?
3. What degree of homogeneity is $f(x, y) = x^3 + 2x^2y - 2xy^2 + y^3$?
4. What degree of homogeneity is $f(x, y) = 3x^3y^{-4} + 2xy^{-2}$?
5. What degree of homogeneity is $f(x_1, x_2, x_3) = e^{x_1+x_2+x_3}$?