

Mathematics Review Course
Summer 2023
Problem Set 08
Solutions

Ryan McWay
August 17th, 2023

Homogeneity

1. What degree of homogeneity is $f(x, y) = 4x^2 + y^2$?

Solution: H.D.2

2. What degree of homogeneity is $f(x, y) = x^3 + y^2$?

Solution: Not Homogeneous.

3. What degree of homogeneity is $f(x, y) = x^3 + 2x^2y - 2xy^2 + y^3$?

Solution: H.D.3

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

Solution: H.D. -1

5. What degree of homogeneity is $f(x_1, x_2, x_3) = e^{x_1+x_2+x_3}$?

Solution: Not Homogenous.