

Quiz 3

MA 262
Artur's Class

February 5, 2012

Problem 1

Give all values of n, c such that

$$f(x, y) = x^n + cy^2$$

is homogeneous.

Problem 2

Give all values α such that

$$dy + 3xy(4 + y^\alpha) dx = 0$$

is

(i) Bernoulli,

(ii) Linear.

DO NOT SOLVE.

Problem 3

Is

$$2xy dx + (x^2 + 1) dy = 0$$

exact? Why?

Problem 4

Find potential function $\phi = \phi(x, y)$ for the equation in #3.