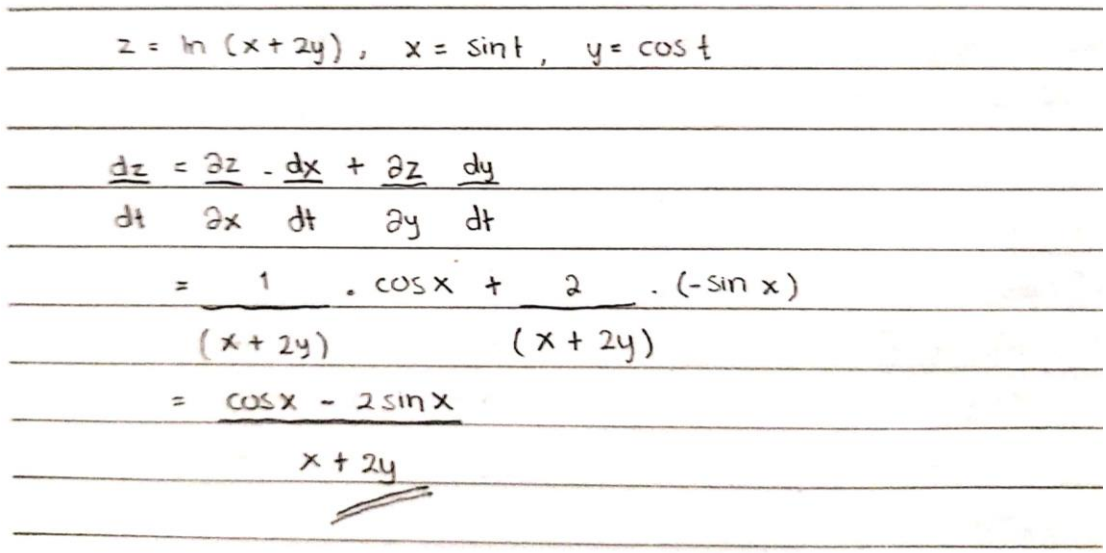
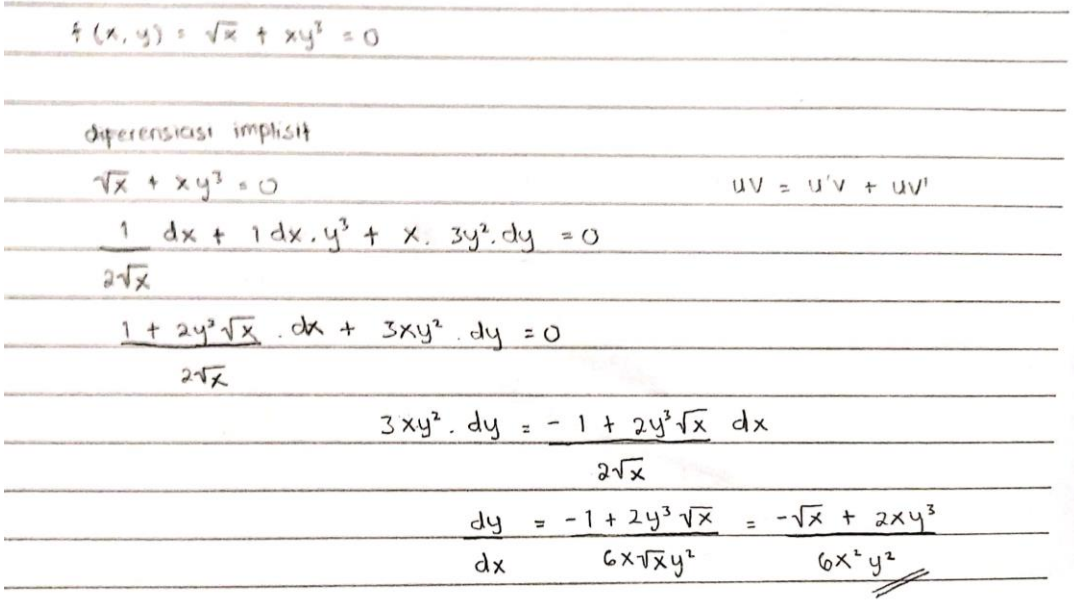
TUGAS PRAKTIKUM PERTEMUAN 5

PENGANTAR MATEMATIKA KOMPUTASIONAL

1. Tentukan $\frac{dz}{dt}$ dari $z = \ln(x + 2y)$ dengan $x = \sin t$ dan $y = \cos t$



2. Tentukan $\frac{dz}{dx}$ dari $f(x, y) = \sqrt{x} + xy^3 = 0$ menggunakan diferensiasi implisit dan aturan rantai implisit



Aturan rantai implisit

$f(x,y) = \sqrt{x} + xy^3 = 0$

$$\frac{dy}{dx} = -\frac{\partial F/\partial x}{\partial F/\partial y}$$

$$= -\frac{(1/2\sqrt{x}) + y^3}{3xy^2}$$

$$= \frac{-1 + 2y^3\sqrt{x}}{6x\sqrt{x}y^2}$$

$$= -\frac{\sqrt{x} + 2xy^3}{6x^2y^2}$$