MTH 201

MULTIVARIABLE CALCULUS AND DIFFERENTIAL EQUATIONS

ASSIGNMENT-1, DUE DATE 12/08/2016

Problem 1. Solve 10, 17, 20, 23, 26, 49, 54 from Exercises 12.1

Problem 2. Solve 15, 25, 35, 42, 46 from Exercises 12.2

Problem 3. Solve 1,8, 9, 17 from Exercises 12.3

PRACTICE PROBLEMS

Problem-1. Let A, B, C are vectors in $\mathbb{R}^3$. Show that,

$$A \times (B \times C) = B(A.C) - C(A.B).$$

Problem-2. Show that if u, v, w and r are any vectors, then

A. $u \times (v \times w) + v \times (w \times u) + w \times (u \times v) = 0$
B. $u \times v = (u.v \times i)i + (u.v \times j)j + (u.v \times k)k$
C. $(u \times v).(w \times r) = \begin{vmatrix} u.w & v.w \\ u.r & v.r \end{vmatrix}$

Note: Please do not submit practice problems. You can discuss it in tutorials.

Text Book: Thomas' Calculus 11th edition (Maurice D. Weir, Joel Hass, Frank R. Gioedano).