MATH 2350: CALCULUS III – Spring 2011 – Sections 002 & 004

Homework 1

Problem Set 9.3 (Page 595)

11, 12, 13, 14, 35, 36, 37, 38

Problem Set 9.4 (Page 604)

1, 2, 3, 4, 5, 6, 10, 11, 12, 15, 16, 19, 20, 23, 24, 27, 28, 29, 30, 31

Additional Problem

Resolve the vector $\boldsymbol{a}$ along the direction of the two vectors $\boldsymbol{v}$ and $\boldsymbol{w}$ as shown in the figure below.

That is, find two vectors $\boldsymbol{p}$ and $\boldsymbol{q}$ such that $\boldsymbol{a} = \boldsymbol{p} + \boldsymbol{q}$, where $\boldsymbol{p}$ is along $\boldsymbol{v}$ and $\boldsymbol{q}$ is along $\boldsymbol{w}$.

NOTE:

- The two vectors $\boldsymbol{v}$ and $\boldsymbol{w}$ are NOT orthogonal and are NOT unit vectors.
- Vectors $\boldsymbol{p}$ and $\boldsymbol{q}$ are NOT the projections of the vector $\boldsymbol{a}$ on $\boldsymbol{v}$ and $\boldsymbol{w}$.

HINT

- Think about the geometry of the setup – refer to the figure given