

Aims and Objectives Relativity 1 and Vectors Session 12

THE VECTOR PRODUCT, MASS SPECTROSCOPY AND PARTICLE ACCELERATORS. *** SELF STUDY ***

Aims (What I intend to do)

- 1) To take another look at vector products, including products of the unit .
- 1) To explore some consequences of one particular law based on a vector product,

$$\mathbf{F} = q(\mathbf{v} \times \mathbf{B})$$

Objectives (What you should be able to do after completing the lecture and worksheet)

- 1) Evaluate scalar and vector product of vectors when the individual vectors are given as combinations of the unit vectors.
- 2) To be able to apply the right hand rule to find the direction of .
- 3) To be able to recognise whether a vector product is needed in certain situations, and if it is, which type of vector product is called for.
- 4) To be able to make use of vector products in analysing physical problems.

Relativity 1 and Vectors PHY1105 Worksheet 12

References are to Young and Freedman, 12th edition

- Task 1.** Go over lecture notes and read Young and Freedman sections 27.4, 27.5 and 27.7.
- Task 2.** Do worked example 27.5 from Young and Freedman – you may need to read the preceding section.
- Task 3.** Do worked example 27.9 from Young and Freedman.
- Task 4.** Preparation for next session. Read sections 37.8 and 44.2 of Young and Freedman.