

161/2S3, Homework Problem Set 2.

Due: 21st January, 2005

Note this homework requires two programs be written and submitted.

`p02.c` should be submitted to directory `161:2` and `p03.c` should be submitted to directory `161:3` using the `submit-work` command on the Maths system.

2.0. Source: “p02.c”, Executable: “p02”

Write a program that calculates the factorial of a number, **using a function** to contain the factorial calculation.

The program should prompt for x , then calculate $x!$ and print this out for the user.

3.0. Source: “p03.c”, Executable: “p03”

Write a program to calculate the dot product and the cross product of two vectors.

The program should read the components of vectors \vec{x} and \vec{y} into two 1-d arrays called x and y and calculate $\vec{x} \cdot \vec{y}$ and $\vec{x} \times \vec{y}$, printing the results out for the user. Note that you do not need to use functions for this program.