

MAPLE Warm-up

1. Download the following Maple demo worksheet from the course web page:

<http://www.math.utexas.edu/users/chu/Teaching/M341Spring2007/maplework/maplewarmup-M341Spring2007.mw>

Note that an `xmple` worksheet itself is in fact just a text file. If you click on the link, your web browser will probably just display the text file (which is unintelligible to humans). Do not worry. Download the file by saving it to your local file system, and open it in `xmple` as explained below.

2. Open `xmple`.

If you are using a Unix terminal at the Undergraduate Computing Lab, here is how you do it:

- a) Log on to your mathematics account using the **KDE** environment.
- b) Click on the **KDE** icon at the bottom left corner. A pop-up menu appears.
- c) Click on the top folder (**Debian**). A side menu pops out.
- d) Click on **Apps** on the side menu (the first item); a further side menu pops out. Click on **Math** (the 5th item from top); a further yet side menu pops out. Click on **Maple** (the 15th item from top).

3. Open the Demo worksheet in `xmple`.

- a) Click on **File** on the top menu bar. Click on **Open**. A pop-up box appears. Locate the downloaded worksheet. Select it. Click on the **Open** button.
- b) To execute the worksheet, click on **Edit** on the top menu bar. On the drop-down menu, click on **Execute** (second last item). On the side menu, click on **Worksheet**.
- c) Study the worksheet: learn the commands used by reading the help pages of those commands.

4. Do the following exercises:

- a) Create the following two vectors:

$$\mathbf{u} := \begin{pmatrix} u_1 \\ u_2 \\ u_3 \\ u_4 \\ u_5 \end{pmatrix}, \quad \mathbf{v} := \begin{pmatrix} v_1 \\ v_2 \\ v_3 \\ v_4 \\ v_5 \end{pmatrix}.$$

Find the linear combination $2\mathbf{u} - 3\mathbf{v}$ using the above Maple commands.

- b) Solve the following system using the `solve` as well as `LinearSolve` command:

$$\begin{cases} 3x - 2y + 5z = 0 \\ 5x - y + 4z = 0 \\ 8x - 3y + 9z = 0 \end{cases}$$

How many solutions do you get?