**Calc 3 - Maple 1**

In class we discussed several Maple commands to visualize functions of two variables, sheets, implicitly defined functions, and vector-valued functions:

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| **with(plots)** | Loads additional plot commands |
| **plot3d(f(x,y), x=A..B, y=C..D)** | Draws a surface in 3D |
| **implicitplot3d(f(x,y,z)=c, x=A..B, y=C..D, z=E..F)** | Draws an implicitly defined function |
| **plot([x(t), y(t), t=A..B], x=C..D, y=E..F)** | Draws a 2D space curve |
| **spacecurve([x(t),y(t),z(t)], t=A..B)** | Draws a 3D space curve |
| **tubeplot([x(t), y(t), z(t)], t=A..B)** | Draws a tube around a 3D space curve |

Complete the following assignments in Maple. Save your Maple worksheet or copy-and-paste your graphs into a Word document. Submit the document as an email attachment to me.

1. Use the appropriate plot command to visualize the following functions:
2. Draw the 2D space curve as *t* goes from -1 to 1. You never know when this graph might come in handy ☺

Maple can also do vector algebra very nicely, as the following example shows:

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1. Use Maple to solve the following questions:
2. If and find , , and
3. Find and . Are they the same?
4. Use Maple to prove that: For any vector we have and

**BONUS**: To see what else Maple can do, execute the following command. Do you know the name of the object?

