Plotting Curves[1]

Sketch the graphs to include in your report. Do not print them.

1. Enter the commands (in the command window):
```
ezplot('x^2 + y^2 = 9')
ezplot('x^2 + x*y + y^2 = 9')
ezplot('x^2/9 + y^2/4 = 1')
ezplot('x^2 - y^2 = 9')
ezplot('(x-4)^2 - (y+2)^2 = 9')
ezplot('x^2 - y = 9')
```
What is the geometric object supposed to be in each of the above? Which ones produce good graphs and which do not?

2. Use `ezplot` to plot the equations:
$x + y = 100$ (Use `ezplot('x + y = 100')`)
$\sin^2 x + \sin^2 y - \ln(xy) = 0$ (`'sin(x)^2+sin(y)^2-log(x*y)=0'`)
$x^5 + y^5 + xy = 0$ (`'x^5 + y^5 + x*y = 0'`)
Sketch the graphs for your report and discuss any problems encountered.

3. Try the following commands:
```
t = 0:pi/50:2*pi;
plot(sin(t)+1, cos(t)-1)
plot(3*sin(t)+3,2*cos(t)-2)
```
What should the geometric object be in each of the above? Repeat the above commands, but replace 50 in the first command by 5. What is the effect?

4. Try the following commands:
```
t = -1.76:.01:1.76;
x = cosh(t);
y = sinh(t);
plot(x,y)
```
Use the identity $\cosh^2(t) - \sinh^2(t) = 1$ to write the parametric equation in cartesian coordinates. What should the plot be?

5. Using complete sentences and standard mathematical notation, prepare a brief written report. Do **not** get a printout.

The user plots curves given both by equations and by parametric functions. The user also encounters difficulties with under-sampling and with choice of domain.