- With Mathematica, plot the Re and Im part of z=x+ I y in the complex plane. Plot3D[Im[Sqrt[x + I y]],{x,-4,4},{y,-4,4}] Plot3D[Re[Sqrt[x + I y]],{x,-4,4},{y,-4,4}] Comment on your answer.
- 2) In George Gamow's 123... Infinity, solve (by hand) the treasure hunter puzzle on Page 36. [The answer is in the book, just work through it.]
- For each of the following numbers, plot the number and label it in five ways as in Figure 3.3. <u>Also</u> plot the complex conjugate of the number.
- a) 1+I, b) I-1, c) 1- I $\sqrt{3}$, d) I- $\sqrt{3}$,
- 4) Compute the Re and Im part of:
- a) (3+I)/(2+I)
- b) Convert this into polar form.
- c) Compute the absolute value
- 5) Compute the Re and Im part of: a) (3+I)/(2+I) , b)

6) Solve for all possible values of the real numbers x and y in the following equations. a) x + Iy = 3I - 4 b) (2x - 3y - 5) + I(x + 2y + 1) = 0

