Solve the equation $z^2+z+1=0$ using $z=(x,y)$ and the basic definitions.
(Hint: Note that $y \neq 0$ because the equation $x^2+x+1\neq 0$ for any real number x.)

a.

$$Z_1 = -1 + j\frac{\sqrt{3}}{2} \text{ and } Z_2 = -\frac{1}{2} - j\frac{\sqrt{3}}{2}$$

b.

$$Z_1 = -\frac{1}{2} + j\frac{\sqrt{3}}{2} \text{ and } Z_2 = -\frac{1}{2} - j\frac{\sqrt{3}}{2}$$

c.

$$Z_1 = -\frac{1}{3} + j\frac{\sqrt{3}}{2} \text{ and } Z_2 = -j\frac{\sqrt{3}}{2}$$

d.

$$Z_1 = \frac{3}{2} + j\frac{\sqrt{3}}{2} \text{ and } Z_2 = -\frac{1}{2} - j\frac{\sqrt{3}}{4}$$