

$$z^2 + (1-i)z - i = 0$$

$$z = \frac{-1+i \pm \sqrt{(1-i)^2 + 4i}}{2} = \frac{-1+i \pm \sqrt{1-1-2i+4i}}{2} =$$

$$= \frac{-1+i \pm \sqrt{2i}}{2} \quad \pm \sqrt{2i} = \pm \sqrt{2} \quad \sqrt{\frac{2}{2}} \overbrace{(1+i)}^{i} = \pm (1+i)$$

$$= \frac{-1+i \pm (1+i)}{2} = \begin{cases} i \\ -1 \end{cases}$$