

Solution (#35) (i) $z^2 + 2\bar{z} = 2$ has solutions

$$1 + i, \quad 1 - i, \quad \sqrt{3} - 1, \quad -\sqrt{3} - 1.$$

(ii) $z^2 + i\bar{z}^2 = 1$ has no solutions.

(iii) $z^4 = 8\bar{z}$ has solutions $0, 2, -2$.

(iv) $1 = z^2 - \bar{z}^2$ has no solutions.