- **Equations dans les complexes**
  - **Résoudre dans $\mathbb{C}$**

1) $2z^2 - 5z + 7 = 0$

2) $iz^2 + 3 = 0$

3) $2iz^2 + 3z = 0$

4) $z^4 - z^2 - 6 = 0$

5) $2iz^2 - z + 3i = 0$

6) $(1+i)z^2 - z + 1 = 0$

7) $2z^2 - iz + 1 = 0$

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

9) $z^2 - z + i = 0$

10) $z^2 - 4z - 3i = 0$

  - **Solutions**

1) $\left\{\frac{1}{4}\left(5 + i\sqrt{31}\right), \frac{1}{4}\left(5 - i\sqrt{31}\right)\right\}$

2) $\left\{(-1-i)\sqrt{\frac{3}{2}}, (1+i)\sqrt{\frac{3}{2}}\right\}$

3) $\left\{0, \frac{3i}{2}\right\}$

4) $\begin{pmatrix} \sqrt{3} & -\sqrt{3} \\ i\sqrt{2} & -i\sqrt{2} \end{pmatrix}$

5) $\left\{-\frac{3i}{2}, i\right\}$

6) $\left\{-i, \frac{1}{2} + \frac{i}{2}\right\}$

7) $\left\{i, -\frac{i}{2}\right\}$

8) $\{2+i, -i\}$

9) $\left\{\frac{1}{2}\left(1 - i\sqrt{\frac{1}{2}\left(-1+\sqrt{17}\right)} + \sqrt{\frac{1}{2}\left(1+\sqrt{17}\right)}\right), \frac{1}{2}\left(1 + i\sqrt{\frac{1}{2}\left(-1+\sqrt{17}\right)} - \sqrt{\frac{1}{2}\left(1+\sqrt{17}\right)}\right)\right\}$

10) $\left\{\frac{1}{2}\left(4 + (3+i)\sqrt{2}\right), \frac{1}{2}\left(4 - (3+i)\sqrt{2}\right)\right\}$