

ESERCIZI SU EQUAZIONI, DISEQUAZIONI, SISTEMI

- Risolvere le seguenti equazioni:

1. $x^2 + 5x + 6 = 0$

$$[S = \{-2, -3\}]$$

2. $x^2 + x + 1 = 0$

$$[S = \emptyset]$$

3. $4x^2 - 4x + 1 = 0$

$$[S = \{1/2\}]$$

- Risolvere le seguenti disequazioni:

4. $x^2 + 5x + 6 > 0$

$$[S = \{x < -3 \vee x > -2\}]$$

5. $x^2 + x + 1 > 0$

$$[S = \mathbb{R}]$$

6. $4x^2 - 4x + 1 > 0$

$$[S = \mathbb{R} \setminus \{1/2\}]$$

7. $x^2 + 5x + 6 \leq 0$

$$[S = \{-3 \leq x \leq -2\}]$$

8. $x^2 + x + 1 < 0$

$$[S = \emptyset]$$

9. $4x^2 - 4x + 1 \leq 0$

$$[S = \{1/2\}]$$

10. $x(x + 1) + \sqrt{5}(1 - x) - 2 < 2(\sqrt{5} - 1)$

$$[S = \{-1 < x < \sqrt{5}\}]$$

11. $\frac{2 - 3x}{5} - \left[4 - \frac{3}{5}x - \frac{4}{5}(x - 1) \right] < \frac{1 - x}{5} - \frac{x}{10}$

$$[S = \{x < 46/11\}]$$

$$12. \frac{2+x}{3x} < 0$$

$$[S = \{-2 < x < 0\}]$$

$$13. \frac{1}{x+3} > \frac{1}{x-3}$$

$$[S = \{-3 < x < 3\}]$$

- Risolvere i seguenti sistemi di disequazioni:

$$14. \begin{cases} 2x - 1 > 0 \\ 3 - x < 0 \end{cases}$$

$$[S = \{x > 3\}]$$

$$15. \begin{cases} 4 - x + 7(x - 1) < 2(x + 1) \\ (x - 1)^2 - (x + 2)^2 > 5 - 2(x - 1) \end{cases}$$

$$[S = \{x < -5/2\}]$$

$$16. \begin{cases} \frac{1}{x-1} > 2 \\ \frac{3}{x} > \frac{1}{2} \end{cases}$$

$$[S = \{1 < x < 3/2\}]$$