

## ÉQUATIONS : EXERCICES

### ► Exercice n°1

1.  $\frac{3}{2}x - \frac{5}{3} = 0$

3.  $3x - 5 = \frac{1}{2}x$

5.  $\sqrt{2}x + \frac{1}{\sqrt{2}} = 0$

7.  $2x - 3(x+1) = \frac{1-2x}{2}$

9.  $x - \sqrt{3}(x+1) = 2 - x$

### ► Exercice n°2

Résoudre dans  $\mathbb{R}$  les équations suivantes :

1.  $(x+1)(3x-2) = 0$

3.  $(x+1)^2(x-3) = 0$

5.  $(2x-1)^2 = (2x-1)(x+3)$

7.  $(2x-1)(x+1) = 5x+5$

9.  $(x-1)^2 = (2x+1)^2$

11.  $x^2 - 6x + 9 = 0$

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

2.  $2x + \sqrt{3} = 0$

4.  $\frac{2}{3}x + 1 = x - 3$

6.  $2(x-3) = \frac{1}{4}(3x-2) + \frac{1}{2}$

8.  $2(x-1) = \sqrt{2}(x+1) - 1$

10.  $\frac{x+1}{2} + \frac{x+2}{3} + \frac{x+3}{4} = 12x - 1$

2.  $2(1-x)(2x-5) = 0$

4.  $(4x-2)(7x+1)(12x-6) = 0$

6.  $(3x+1)^2 - (x+1)^2 = 0$

8.  $(x+1)^2 - (2x+2) = 0$

10.  $(4x^2 - 9) - 2(2x-3) + x(2x-3) = 0$

12.  $3x^2 - 6x + 3 = 0$

14.  $4x^2 = 4x - 1$

### ► Exercice n°3

Résoudre dans  $\mathbb{R}$  les équations suivantes :

1.  $\frac{1}{x} = 2$

3.  $\frac{2x+1}{3x-2} = 0$

5.  $\frac{x^2-2x}{2+x} = 0$

7.  $\frac{\frac{x}{2}-1}{3-2x} = 2$

9.  $\frac{9}{x+1} = 5 - x$

11.  $\frac{x^2}{x-1} = 1 + \frac{1}{x-1}$

13.  $\frac{x^2+4x-3}{x^2-1} = 1$

15.  $\frac{x+2}{x} + \frac{x}{x-2} = 0$

2.  $\frac{2}{x+1} = 3$

4.  $\frac{7x+1}{2x-3} = 2$

6.  $\frac{x^2-9}{3x} = 0$

8.  $\frac{1}{x+1} - \frac{2}{x-1} = 0$

10.  $\frac{x-1}{x-2} - \frac{x-2}{x-1} = 0$

12.  $2x - 7 = \frac{4}{2x-7}$

14.  $\frac{9x^2-25}{(x+2)(3x+5)} = 0$

## SOLUTIONS

### ► Solutions exercice n°1

1.  $S = \left\{ \frac{10}{9} \right\}$

3.  $S = \{2\}$

5.  $S = \left\{ -\frac{1}{2} \right\}$

2.  $S = \left\{ -\frac{\sqrt{3}}{2} \right\}$

4.  $S = \{12\}$

6.  $S = \left\{ \frac{24}{5} \right\}$

$$7. S = \emptyset$$

$$9. S = \{7 + 4\sqrt{3}\}$$

► Solutions exercice n°2

$$1. S = \left\{-1; \frac{2}{3}\right\}$$

$$3. S = \{-1; 3\}$$

$$5. S = \left\{\frac{1}{2}; 4\right\}$$

$$7. S = \{-1; 3\}$$

$$9. S = \{-2; 0\}$$

$$11. S = \{3\}$$

$$13. S = \{0; 2\}$$

► Solutions exercice n°3

$$1. S = \left\{\frac{1}{2}\right\}$$

$$3. S = \left\{-\frac{1}{2}\right\}$$

$$5. S = \{0; 2\}$$

$$8. S = \left\{\frac{4 + 3\sqrt{2}}{2}\right\}$$

$$10. S = \left\{\frac{35}{131}\right\}$$

$$2. S = \left\{1; \frac{5}{2}\right\}$$

$$4. S = \left\{-\frac{1}{7}; \frac{1}{2}\right\}$$

$$6. S = \left\{0; -\frac{1}{2}\right\}$$

$$8. S = \{-1; 1\}$$

$$10. S = \left\{\frac{3}{2}; -\frac{1}{3}\right\}$$

$$12. S = \{1\}$$

$$14. S = \left\{\frac{1}{2}\right\}$$

$$2. S = \left\{-\frac{1}{3}\right\}$$

$$4. S = \left\{-\frac{7}{3}\right\}$$

$$6. S = \{3; -3\}$$

$$7. S = \left\{\frac{14}{9}\right\}$$

$$9. S = \{2\}$$

$$11. S = \{0\}$$

$$13. S = \left\{\frac{1}{2}\right\}$$

$$15. S = \{-\sqrt{2}; \sqrt{2}\}$$

$$8. S = \{-3\}$$

$$10. S = \left\{\frac{3}{2}\right\}$$

$$12. S = \left\{\frac{9}{2}; \frac{5}{2}\right\}$$

$$14. S = \left\{\frac{5}{3}\right\}$$