

Exercice 1 : Résoudre les équations suivantes : a)  $2x=3$  ; b)  $x+2=3$  ; c)  $2x=0$  ; d)  $2x=1$  ; e)  $x+2=0$  ;

f)  $x+2=1$  ; g)  $2-x=0$  ; h)  $2-x=1$  ; i)  $x-2=1$  ; j)  $\frac{x}{2}=0$  ; k)  $\frac{x}{2}=1$  ; l)  $\frac{x}{2}=5$  ; m)  $\frac{2}{x}=1$  ; n)  $\frac{2}{x}=5$  ;

o)  $\frac{2}{x}=0$  ; p)  $\frac{2}{3}x=5$  ; q)  $\frac{2}{3}x=0$  ; r)  $\frac{2}{3}x=-1$  ; s)  $\frac{2x-1}{3}=0$  ; t)  $\frac{2x-1}{x}=0$  ; u)  $\frac{2}{x+1}=1$  ; v)  $\frac{3}{x-3}=1$  ;

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Exercice 2 : Résoudre les équations suivantes : a)  $9x^2-1=3x+1$  ; b)  $x(3x-2)=4-9x^2$  ; c)  $(2x-1)^2-(3x+2)^2=0$  ;

d)  $(3x+2)^2=(5-2x)^2$  ; e)  $2(x-1)^2-3(2x+1)^2=0$  ; f)  $\frac{(2x+1)^2}{4}-\frac{x^2}{9}=0$  ; g)  $(x+3)(2x+5)^2=3+x$  ;

h)  $4x^2+4x+1=0$  ; i)  $\frac{x^2}{9}+\frac{2x}{3}+1=0$  ; j)  $3x^2-2\sqrt{3}x+1=0$ .

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Exercice 3 : Résoudre les équations suivantes : a)  $x^2=25$  ; b)  $4x^2=25$  ; c)  $5x^2=0$  ; d)  $3x^2=-2$  ; e)  $25x^2-81=0$  ;

f)  $121x^2+1=0$  ; g)  $\pi x^2+\sqrt{11}=0$  ; h)  $(2x-1)^2=3$  ; i)  $(x+2)^2=x^2-4$  ; j)  $4(x+3)^2=x^2-9$ .

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Exercice 4 : Résoudre les équations suivantes : a)  $x^5+4x^4+4x^3=0$  ; b)  $25x^2-4+(5x+2)(4x-7)=0$  ;

c)  $\frac{x}{3}+\frac{9}{4}=\frac{-5x}{6}+\frac{15}{2}$  ; d)  $x^2(x-4)+2x(x-4)+(x-4)=0$  ; e)  $0,09x^2-1,21=0$  ; f)  $(2x+3)^2=2(x+1)^2$  ;

g)  $(x+2)^2-2x-4=-1$  ; h)  $4x^2+2x+\frac{1}{4}=0$  ; i)  $49-28x+4x^2+(7-2x)(5-3x)=0$  ; j)  $(x+1)^2+(x-1)^2=4$ .

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Exercice 5 : Résoudre les équations suivantes : a)  $(3x+2)-4+9x^2=0$  ; b)  $3(x+2)+2(x+2)^2=0$  ; c)

$\frac{1}{x+2}=\frac{1}{x^2-4}$  ;

d)  $\frac{2}{2x-1}+\frac{1}{x-3}=0$  ; e)  $x^4=16$  ; f)  $(2x+1)^2-3x-\frac{3}{2}=0$  ; g)  $(3x-2)^2-(x+1)(2-3x)+\frac{9}{2}x^2-6x+2=0$  ;

h)  $x^8+2x^4+1=0$  ; i)  $x^6-x^5+x^4-x^3+x^2-x=0$  ; j)  $(3x-1)^2+5x^2=(2x+1)^2$ .

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$$\mathbf{R1} : [S_a = \left\{ \frac{3}{2} \right\}, S_b = \{1\}, S_c = \{0\}, S_d = \left\{ \frac{1}{2} \right\}, S_e = \{-2\}, S_f = \{-1\}, S_g = \{2\}, S_h = \{1\}, S_i = \{3\}, S_j = \{0\}, \\ S_k = \{2\}, S_l = \{10\}, S_m = \{2\}, S_n = \left\{ \frac{2}{5} \right\}, S_o = \emptyset, S_p = \left\{ \frac{15}{2} \right\}, S_q = \{0\}, S_r = \left\{ \frac{-3}{2} \right\}, S_s = \left\{ \frac{1}{2} \right\}, S_t = \left\{ \frac{1}{2} \right\}, \\ S_u = \{1\}, S_v = \{6\}]$$

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$$\mathbf{R2} : [S_a = \left\{ \frac{-1}{3}, \frac{2}{3} \right\}, S_a = \left\{ \frac{-1}{2}, \frac{2}{3} \right\}, S_c = \left\{ -3, \frac{-1}{5} \right\}, S_d = \left\{ -7, \frac{3}{5} \right\}, \\ S_e = \left\{ \frac{\sqrt{2} + \sqrt{3}}{\sqrt{2} - 2\sqrt{3}}, \frac{\sqrt{2} - \sqrt{3}}{\sqrt{2} + 2\sqrt{3}} \right\} = \left\{ \frac{-8 - 3\sqrt{6}}{10}, \frac{-8 + 3\sqrt{6}}{10} \right\}, S_f = \left\{ \frac{-3}{4}, \frac{-3}{8} \right\}, S_g = \{-3, -2\}, S_h = \left\{ \frac{-1}{2} \right\}, S_i = \{-3\}, \\ S_j = \left\{ \frac{1}{\sqrt{3}} \right\}]$$

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$$\mathbf{R3} : [S_a = \{-5, 5\}, S_a = \left\{ \frac{-5}{2}, \frac{5}{2} \right\}, S_c = \{0\}, S_d = \emptyset, S_e = \left\{ \frac{-9}{5}, \frac{9}{5} \right\}, S_f = \emptyset, S_g = \emptyset, S_h = \left\{ \frac{-\sqrt{3} + 1}{2}, \frac{\sqrt{3} + 1}{2} \right\}, \\ S_i = \{-2\}, S_j = \{-5, -3\}]$$

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$$\mathbf{R4} : [S_a = \{-2, 0\}, S_a = \left\{ \frac{-2}{5}, 1 \right\}, S_c = \left\{ \frac{9}{2} \right\}, S_d = \{-1, 4\}, S_e = \left\{ \frac{-11}{3}, \frac{11}{3} \right\}, \\ S_f = \left\{ \frac{3 - \sqrt{2}}{2 - \sqrt{2}}, \frac{3 + \sqrt{2}}{2 - \sqrt{2}} \right\} = \left\{ \frac{-4 - \sqrt{2}}{2}, \frac{-4 + \sqrt{2}}{2} \right\}, S_g = \{-1\}, S_h = \left\{ \frac{-1}{4} \right\}, S_i = \left\{ \frac{7}{2}, \frac{12}{5} \right\}, S_j = \{-1, 1\}]$$

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$$\mathbf{R5} : [S_a = \left\{ \frac{-2}{3}, \frac{1}{3} \right\}, S_a = \left\{ \frac{-7}{2}, -2 \right\}, S_c = \{3\}, S_d = \left\{ \frac{7}{4} \right\}, S_e = \{-2, 2\}, S_f = \left\{ \frac{-1}{2}, \frac{1}{4} \right\}, S_g = \left\{ \frac{4}{11}, \frac{2}{3} \right\}, S_h = \emptyset, \\ S_i = \{0, 1\}, S_j = \{0, 1\}]$$


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