

exercice 39:

$$a) 2x^2 - 5x - 3 = 0$$

$$\Delta = b^2 - 4ac$$

$$= (-5)^2 - \boxed{4 \times 2 \times (-3)}$$

$$= 25 + 24$$

$$= 49 > 0$$

$$x_1 = \frac{-b - \sqrt{\Delta}}{2a} = \frac{-(-5) - \sqrt{49}}{2 \times 2}$$

$$= \frac{5 - 7}{4}$$

$$= -\frac{2}{4} = -\frac{1}{2}.$$

$$x_2 = \frac{-b + \sqrt{\Delta}}{2a} = \frac{5 + 7}{2} = 3.$$

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

$$b) \quad 3x^2 - 2x + \frac{1}{3} = 0.$$

$$\Delta = 4 - 4 \times 3 \times \frac{1}{3} = 0$$

$$x_0 = \frac{-b}{2a} = \frac{-(-2)}{2 \times 3} = \frac{1}{3}$$

$$\text{donc } \mathcal{S} = \left\{ \frac{1}{3} \right\}.$$

$$c) \quad x^2 + 2x = 35.$$

$$x^2 + 2x - 35 = 0$$

$$\Delta = 4 - 4 \times 1 \times (-35)$$

$$= 4 + 140$$

$$= 144 > 0$$

$$x_1 = \frac{-2 - 12}{2} = -7$$

$$x_2 = \frac{-2 + 12}{2} = 5.$$

$$\text{donc } \mathcal{S} = \{-7; 5\}.$$

d) $t^2 + t + 9 = 0.$

$$\Delta = 1^2 - 4 \times 1 \times 9$$

$$= 1 - 36$$

$$= -35 < 0$$

donc $\mathcal{S} = \emptyset.$

exercice 40:

$$a) -3x^2 + x + 4 = 0$$

$$\Delta = 1^2 - 4 \times 4 \times (-3)$$

$$= 49 > 0$$

$$x_1 = \frac{-b - \sqrt{\Delta}}{2a} = \frac{-1 - 7}{2 \times -3}$$

$$= \frac{-8}{-6}$$

$$= \frac{4}{3}.$$

$$x_2 = \frac{-b + \sqrt{\Delta}}{2a} = \frac{6}{-6} = -1.$$

$$\text{donc } \mathcal{S} = \left\{ \frac{4}{3}; -1 \right\}.$$

$$b) \quad 4x - 4x^2 + 15 = 0.$$

$$\Delta = 16 - 4 \times -4 \times 15 \\ = 256$$

$$x_1 = \frac{-4 - 16}{2 \times -4} = \frac{-20}{-8} = \frac{5}{2}.$$

$$x_2 = \frac{-4 + 16}{-8} = \frac{12}{-8} = -\frac{3}{2}$$

$$\text{donc } \mathcal{S} = \left\{ \frac{5}{2}; -\frac{3}{2} \right\}.$$

$$c) 7u^2 + 5u + 1 = 0$$

$$\Delta = 25 - 4 \times 7 \times 1$$

$$= 25 - 28$$

$$= -3 < 0$$

donc $\mathcal{S} = \emptyset$.

$$d) \quad 0,5x^2 + 2,5x - 7 = 0$$

$$\Delta = (2,5)^2 - 4 \times 0,5 \times -7$$

$$= 6,25 - 2 \times -7$$

$$= 6,25 + 14$$

$$= 20,25 > 0$$

$$x_1 = \frac{-b - \sqrt{\Delta}}{2a} = \frac{-2,5 - \sqrt{20,25}}{2 \times 0,5}$$

$$= \frac{-2,5 - 4,5}{1}$$

$$= -7$$

$$x_2 = 2 \quad \cdot \quad \text{Donc } \Delta = \{2; -7\}$$

