

2.5.6

18.11.22

$$g) (x^2 - 5x + 6)^2 - 2(x^2 - 5x + 6) = 0$$

$$(x^2 - 5x + 6) \cdot [ (x^2 - 5x + 6) - 2 ] = 0$$

$$(x^2 - 5x + 6) \cdot (x^2 - 5x + 4) = 0$$

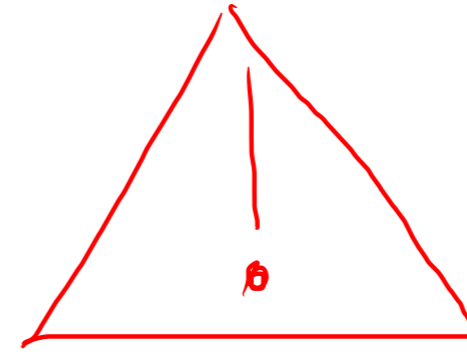
$$(x - 2)(x - 3)(x - 1)(x - 4) = 0$$

$$S = \{ 1; 2; 3; 4 \}$$

Ex 2.5.7

$$k) \frac{x^2 + 5}{8} = \frac{2(3-x)}{5} - \frac{3(x-1)}{10}$$

· 40



$$5(x^2 + 5) = 16(3-x) - 12(x-1)$$

$$5x^2 + 25 = 48 - 16x - 12x + 12$$

$$5x^2 + 28x - 35 = 0$$

$$\begin{aligned} \Delta &= 28^2 + 20 \cdot 35 = 784 + 700 = 1484 \\ &= 4 \cdot 371 \end{aligned}$$

$$\left[ \begin{aligned} x_1 &= \frac{-28 + \sqrt{1484}}{10} = \frac{\overset{-14}{\cancel{-28}} + \overset{1}{\cancel{2}}\sqrt{371}}{\cancel{10}5} = \frac{-14 + \sqrt{371}}{5} \\ x_2 &= \frac{-28 - \sqrt{1484}}{10} = \frac{-28 - 2\sqrt{371}}{10} = \frac{-14 - \sqrt{371}}{5} \end{aligned} \right.$$

2.5.11

$$b) \frac{x^2 + x + 1}{2x + 2} = x$$

1) Déterminons l'ensemble de définition de cette équation :

$$2x + 2 = 0$$

$$2x = -2$$

$$x = -1$$

$$ED = \mathbb{R} - \{-1\}$$

$$2) \frac{x^2 + x + 1}{2x + 2} = \frac{x}{1} \quad \cdot (2x + 2)$$

$$x^2 + x + 1 = x(2x + 2)$$

$$x^2 + x + 1 = 2x^2 + 2x$$

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

$$x_1 = \frac{-1 + \sqrt{5}}{2}, \quad x_2 = \frac{-1 - \sqrt{5}}{2}$$

$$3) S = \left\{ \frac{-1 \pm \sqrt{5}}{2} \right\}$$

$$c) \frac{1}{x+1} + \frac{1}{x+3} + \frac{3}{4} = 0 \quad \text{ED} = \mathbb{R} - \{-3, -1\}$$

$$\frac{1 \cdot 4 \cdot (x+3)}{4(x+1)(x+3)} + \frac{1 \cdot 4(x+1)}{4(x+3)(x+1)} + \frac{3 \cdot (x+1)(x+3)}{4(x+1)(x+3)} = 0$$

$$4(x+3) + 4(x+1) + 3(x+1)(x+3) = 0$$

$$3x^2 + 20x + 25 = 0$$

$$(3x + 5)(x + 5) = 0$$

$$\downarrow$$
$$x = -\frac{5}{3} \quad x = -5$$

$$S' = \left\{ -\frac{5}{3}, -5 \right\}$$