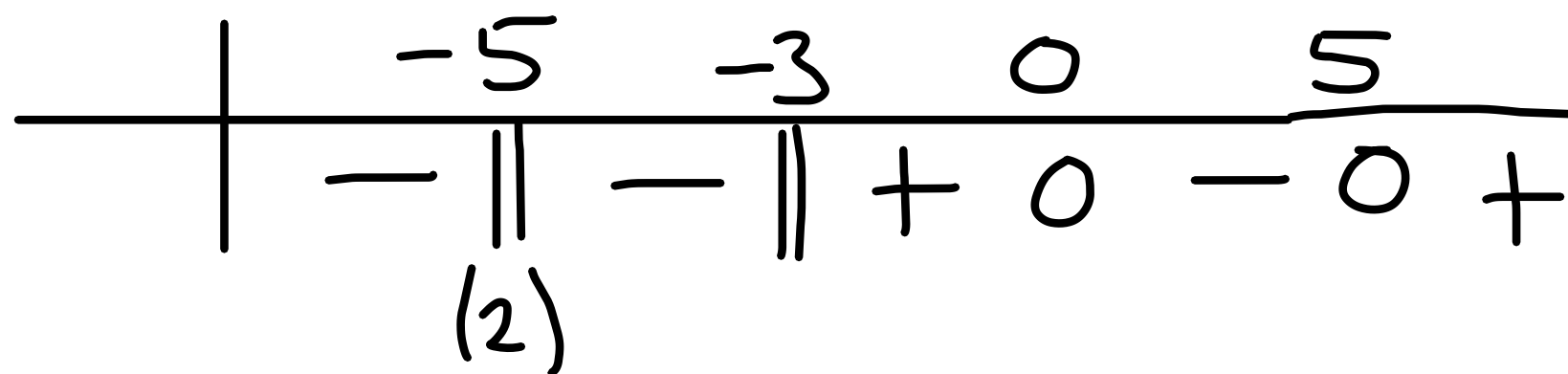


# Ex 1.6

a)  $ED(f) = \mathbb{R} - \{-5; -3\}$

zéro : 0 et 5



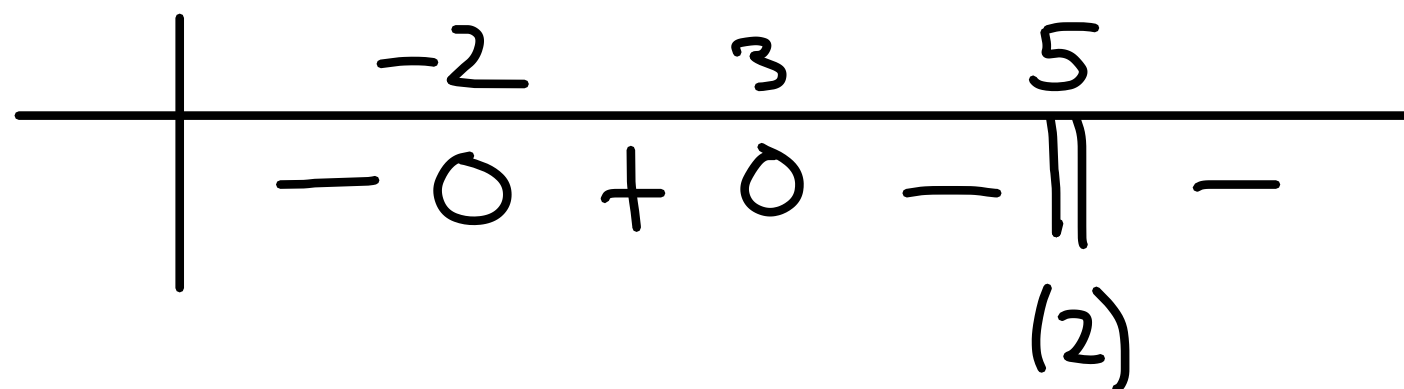
b)  $f(x) = \frac{-(x+2)(x-3)}{(x-5)^2}$

$ED(f) = \mathbb{R} - \{5\}$

v.i.: 5 (2)

zéro : -2 et 3

$\Delta = \dots$



$$c) f(x) = \frac{(2x-3)(3x-2)}{(2x-3)^3}$$

$$ED(f) = \mathbb{R} - \left\{ \frac{3}{2} \right\}$$

$$\text{zeros: } \Delta = \dots$$

$$v.i: \frac{3}{2} \quad (3)$$

$$x_{1,2} = \begin{cases} \frac{3}{2} \\ \frac{2}{3} \end{cases}$$

$$ax^2 + bx + c$$

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

$$x_{1,2} =$$

(4)

x	2/3	3/2
sgn(f)	-	0
	+	+

(4)

$$d) f(x) = \frac{(x-1)(x-2)^2}{(x-4)(x+3)}$$

$$ED(f) = \mathbb{R} - \{-3; 4\}$$

v.i : -3 et 4

$$\begin{aligned} \text{zéros : } x^3 - 5x^2 + 8x - 4 &= (x-1)(x^2 - 4x + 4) \\ &= (x-1)(x-2)^2 = 0 \end{aligned}$$

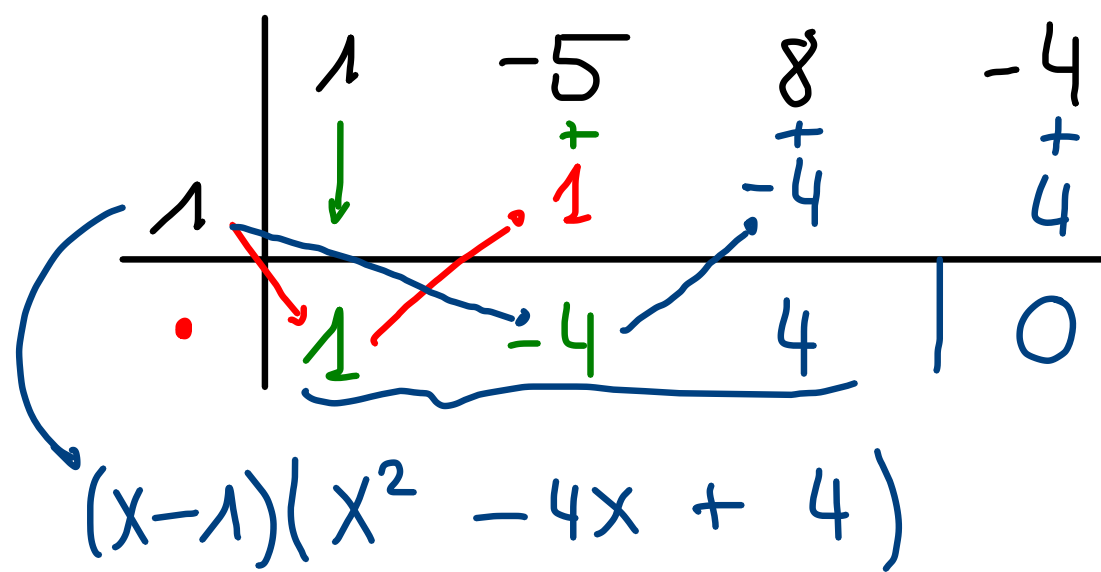
$\downarrow$                        $\downarrow$   
 1                              2  
                                   (2)

$x$	-3	1	2	4
$\text{syn}(f)$	-	+	-	+
		0	0	
			(2)	

Rappel : Horner                       $x^3 - 5x^2 + 8x - 4$

zéros possibles :  $\pm 1 \pm 2 \pm 4$

$$x=1 : 1^3 - 5 \cdot 1^2 + 8 \cdot 1 - 4 = 0 \quad \checkmark$$



$$e) f(x) = \frac{(x-2)^2 (x+3)^3 - 2(x-2)^3 (x+3)^2}{(x-4)^2}$$

$$= \frac{(x-2)^2 (x+3)^2 [(x+3) - 2(x-2)]}{(x-4)^2}$$

$$= \frac{(x-2)^2 (x+3)^2 (-x+7)}{(x-4)^2}$$

$$ED(f) = \mathbb{R} - \{4\} \quad \text{v.i. } 4 \quad (2)$$

$$\text{zero: } \quad 2 \quad -3 \quad 7$$

$$\quad \quad (2) \quad (2)$$

x	-3	2	4	7			
sgn(f)	+	0	+		+	0	-
		(2)	(2)	(2)			

$$f(\infty): \frac{+ \cdot + \cdot -}{+} = \frac{-}{+} = -$$

$$\underline{A^2 B^3} - 2 \underline{A^3 B^2}$$

$$= A^2 B^2 (B - 2A)$$

$$\text{vérif: } A^2 B^3 - 2A^3 B^2 \checkmark$$

$$A = (x-2)$$

$$B = (x+3)$$