

Inéquations (suite)

Exemples : a) $x^3 + 6x^2 \geq x + 6$

$$\underline{x^3 + 6x^2 - x - 6} \geq 0$$

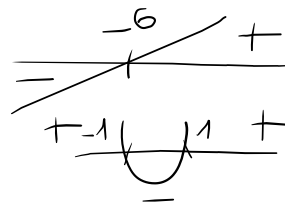
$$x^2(x+6) - 1(x+6) \geq 0$$

$$(x+6)(x^2-1) \geq 0$$

$$(x+6)(x+1)(x-1) \geq 0$$

zéros : $\downarrow$ $\downarrow$ $\downarrow$
 -6 -1 1

x	-6	-1	1
$x+6$	$-$	0	$+$
x^2-1	$+$	0	$-$
sgn	$-$	0	$+$



$$\Rightarrow S = [-6; -1] \cup [1; +\infty[$$

Si $(x+6)(x+1)(x-1) > 0$

$$\Rightarrow S =]-6; -1[\cup]1; +\infty[$$

Si $(x+6)(x+1)(x-1) < 0$

$$\Rightarrow S =]-\infty; -6[\cup]-1; 1[$$

$$b) \quad \frac{x^2 + 5x - 6}{x^2 - 1} \geq 0$$

$$\Leftrightarrow \frac{(x+6)(x-1)}{(x+1)(x-1)} \geq 0$$

⚠ ne pas simplifier la fraction

zéros : -6 (et 1)

v.i. : -1 et 1

X	-6	-1	1
$x^2 + 5x - 6$	+	-	+
$x^2 - 1$	+	-	+
sgn	+	-	+

$$\Rightarrow S =]-\infty; -6] \cup]-1; 1[\cup]1; +\infty[$$

Ex 3.3.25 c)

26 a) b) e) f) i) l)