# Travaux de vacances 2018 sur les inéquations

Correction des deux premiers exercices

$$\frac{9x-1}{7x-3} \geq \frac{-x-7}{7x-3}$$
$$\frac{9x-1-(-x-7)}{7x-3} \geq 0$$
$$\frac{10x+6}{7x-3} \geq 0$$

| | | -3/5 | | 3/7 | |
|---|---|---|---|---|---|
| 10x + 6 | - | 0 | + | + | + |
| 7x-3 | - | - | - | 0 | + |
| | + | 0 | - | / | + |

S = ]-∞ , -3/5] U ]3/7 , +∞[

$$\frac{2x+5}{x+1} + \frac{5}{x^2-1} \geq \frac{2x}{1-x}$$
$$\frac{2x+5}{x+1} + \frac{5}{x^2-1} - \frac{2x}{1-x} \geq 0$$
$$\frac{2x+5}{x+1} + \frac{5}{x^2-1} + \frac{2x}{x-1} \geq 0$$
$$\frac{(2x+5)(x-1)}{x^2-1} + \frac{5}{x^2-1} + \frac{2x(x+1)}{x^2-1} \geq 0$$
$$\frac{4x^2+5x}{x^2-1} \geq 0$$

| | | -5/4 | | -1 | | 0 | | 1 | |
|---|---|---|---|---|---|---|---|---|---|
| $4x^2+5x$ | + | 0 | - | - | - | 0 | + | + | + |
| $x^2-1$ | + | + | + | 0 | - | - | - | 0 | + |
| | + | 0 | - | / | + | 0 | - | / | + |

S = ]-∞ , -5/4[ U ]-1 , 0] U ]1 , +∞[