Inéquations réductibles au second degré

Résoudre

1) $\dfrac{x+7}{x+1} - \dfrac{x+2}{x} \geq 1$

2) $\dfrac{x+3}{x-1} - \dfrac{x-2}{x+1} \geq -1$

3) $\dfrac{2x+4}{1-x} - \dfrac{x+4}{x-3} \geq 1$

4) $\dfrac{(4-x^2)(-x^2+x-5)}{4x^2-12x+9} \geq 0$

5) $\dfrac{(-x^2+x-10)(2x^2+5x-12)}{3(3-2x)x(-2x^2+5x+3)} \geq 0$

6) $\dfrac{(x-2)(-x^2+6x-8)(x^2-5x+6)}{(1-2x)(x^2-4x+3)(3x^2-4x+1)} \leq 0$

7) $5 < \dfrac{4-x}{2x}$

8) $\dfrac{x^2-4}{2x^2-7x+3} \geq 0$

9) $2x > \dfrac{4}{x-1}$

10) $\dfrac{4x^2-5x+1}{4x^2-1} \leq 0$

Solutions:

1) $S = \,]-1\,,\,0\,[\ \cup\ [\,1\,,\,2\,]$

2) $S = \,\leftarrow\,,\,-7] \ \cup\ ]-1\,,\,0\,] \ \cup\ ]\,1,\,\rightarrow$

3) $S = \,[\,\frac{1}{8}(3-\sqrt{217})\,,\,1\,[\ \cup\ [\,\frac{1}{8}(3+\sqrt{217})\,,\,3\,[$

4) $S = \,\leftarrow\,,\,-2] \ \cup\ [\,2,\,\rightarrow$

5) $S = \,[\,-4\,,\,-\frac{1}{2}\,[\ \cup\ ]\,0\,,\,3\,[$

6) $S = \,]\,\frac{1}{3}\,,\,\frac{1}{2}\,[\ \cup\ [\,2\,,\,4\,]$

7) $S = \,]\,0\,,\,\frac{4}{11}\,[$

8) $S = \,\leftarrow\,,\,-2] \ \cup\ ]\,\frac{1}{2}\,,\,2\,] \ \cup\ ]\,3,\,\rightarrow$

9) $S = \,]-1\,,\,1\,[\ \cup\ ]\,2,\,\rightarrow$

10) $S = \,]-\frac{1}{2}\,,\,\frac{1}{4}\,] \ \cup\ ]\,\frac{1}{2}\,,\,1\,]$