36 $\frac{x-a}{3} < a(1-x) + \frac{1}{3}(x+2a)$.

$\left[\begin{array}{l} \text{per } a>0\text{: } x<2 \\ \text{per } a<0\text{: } x>2 \\ \text{per } a=0\text{: nessun valore di } x \end{array}\right]$

37 $(a-1)x > a^2-1$.

$\left[\begin{array}{l} a>1 \rightarrow x>a+1 \\ a<1 \rightarrow x<a+1 \\ a=1 \rightarrow \text{nessun valore di } x \end{array}\right]$

38 $(a+b)x + b^2 > a^2$, con $a>0$, $b>0$.

$[x>a-b]$

39 $\frac{x}{2a} + \frac{3x-1}{a} < a+1$, con $a>0$.

$\left[x<\frac{2(a^2+a+1)}{7}\right]$

40 $\frac{x}{a} + \frac{x}{b} < 2(a+b)$, con $a>0$, $b>0$.

$[x<2ab]$

41 $a(x-1) - 5 < 3x - a$.

$\left[\begin{array}{l} a>3\text{: } x<\frac{5}{a-3} \\ a=3\text{: } x \text{ qualsiasi} \\ a<3\text{: } x>\frac{5}{a-3} \end{array}\right]$

42 $a(x-a) < 3(x-3)$.

$\left[\begin{array}{l} a>3\text{: } x<a+3 \\ a=3\text{: nessun valore di } x \\ a<3\text{: } x>a+3 \end{array}\right]$

43 $x(a+2) - (2-a)(2+a) > 0$, con $a>0$.

$[x>2-a]$

44 $x(a+2) - (a+2)(2-a) > 0$.

$\left[\begin{array}{l} a>-2\text{: } x>2-a \\ a=-2\text{: nessun valore di } x \\ a<-2\text{: } x<2-a \end{array}\right]$

45 $b(x-a) + x < 2bx - (a-x)$.

$\left[\begin{array}{l} b>0\text{: } x>\frac{a(1-b)}{b} \\ b<0\text{: } x<\frac{a}{b}(1-b) \\ b=0\text{: } \begin{cases} x \text{ qualsiasi se } a<0 \\ \text{nessun valore di } x \text{ se } a\geq 0 \end{cases} \end{array}\right]$

46 $(a-2)(6x-1) - (x+1) > x(6a-1) - 1$.

$\left[x<\frac{2-a}{12}\right]$

24 $\begin{cases} \frac{3}{5}x+\frac{1}{20}-\left(1-\frac{1-x}{5}\right)<\frac{1}{5} \\ \frac{x+2}{3}+(1-x)(1+x)>x(1-x)-1. \end{cases}$ $\left[x<\frac{19}{8}\right]$

25 $\begin{cases} ax-a(x-1)<3x \\ x-2a+3x<\frac{x+a}{2}, \text{ con } a>0. \end{cases}$ $\left[\frac{a}{3}<x<\frac{5a}{7}\right]$

26 $\begin{cases} \frac{x}{2}-1<\frac{x+2}{3} \\ x+5>\frac{x-1}{4}. \end{cases}$ $[-7<x<10]$

27 $\begin{cases} a^2x+b^2x<a^2-b^2 \\ a(ax-2)-b(4-bx)<a(a-2)-b(4+b). \end{cases}$ $\left[x<\frac{a^2-b^2}{a^2+b^2}\right]$

28 $\begin{cases} 2ax<(2x+1)(a-1) \\ \frac{a}{2}+x+a<\frac{1}{2}+2a. \end{cases}$ $\left[x<\frac{a-1}{2}\right]$

29 $\begin{cases} 2ax-1<a(3-x)+2 \\ x+\frac{3}{2}a>\frac{2x-5}{2}-a(x+1), \text{ con } a>0. \end{cases}$ $\left[\frac{-5(a+1)}{2a}<x<\frac{a+1}{a}\right]$

30 $\begin{cases} \frac{x-2}{2}+x>\frac{a+2x}{2}-1 \\ \frac{a(3x+1)}{3}-\frac{5}{6}<ax+\frac{2x-1}{6}. \end{cases}$ $[x>a]$

31 $\begin{cases} x-\frac{1-5a}{4}<2a+\frac{x+2}{4} \\ \frac{a(x+1)}{6}+\frac{5x-a}{3}>\frac{a}{2}+\frac{x}{3}-\frac{(2-a)x-a}{6}. \end{cases}$

$\left[\begin{array}{l} \text{per } a\leq -2\text{: nessun valore di } x \\ \text{per } a>-2\text{: } \frac{a}{2}<x<a+1 \end{array}\right]$

32 $\begin{cases} x(a+1)+\frac{2-3a}{5}<a+\frac{2(a+1)+5x}{5} \\ x(a+3)>2(x-a)+x. \end{cases}$ $\left[\begin{array}{l} \text{per } a>0\text{: } -2<x<2 \\ \text{per } a\leq 0\text{: nessun valore di } x \end{array}\right]$

27 $\frac{a-x}{b-x}<0$, con $a>b$. $[b<x<a]$

28 $\frac{x}{a+x}>1$. $\left[\begin{array}{l} a<0:\ x>-a \\ a>0:\ x<-a \\ a=0:\ \text{nessun valore di } x \end{array}\right]$

29 $\frac{a}{a+x}>\frac{b}{b+x}$, con $a>0;\ b>0$. $\left[\begin{array}{l} \text{se } a>b:\ -a<x<-b \vee x>0 \\ \text{se } a<b:\ x<-b \vee -a<x<0 \\ \text{se } a=b:\ \text{nessun valore di } x \end{array}\right]$

30 $\frac{3}{ax-1}<\frac{2}{ax-2}$, con $a>0$. $\left[x<\frac{1}{a} \vee \frac{2}{a}<x<\frac{4}{a}\right]$

31 $\frac{m-x}{2x-m}<1$. $\left[\begin{array}{l} \text{per } m>0:\ x<\frac{m}{2} \vee x>\frac{2}{3}m \\ \text{per } m<0:\ x<\frac{2}{3}m \vee x>\frac{m}{2} \\ \text{per } m=0:\ \forall x \neq 0 \end{array}\right]$

32 $\frac{2a}{x-2}-\frac{1}{2}<\frac{2a+1+x}{2x-4}$. $\left[\begin{array}{l} \text{per } a<\frac{3}{2}:\ x<a+\frac{1}{2} \vee x>2 \\ \text{per } a>\frac{3}{2}:\ x<2 \vee x>a+\frac{1}{2} \\ \text{per } a=\frac{3}{2}:\ \forall\ x \neq 2 \end{array}\right]$

33 $\frac{(1-x)(2x-1)}{(3x-1)x}>0$. $\left[0<x<\frac{1}{3} \vee \frac{1}{2}<x<1\right]$

34 $\frac{2x(x-2)(3x+1)}{6x-5}<0$. $\left[-\frac{1}{3}<x<0 \vee \frac{5}{6}<x<2\right]$

35 $\frac{(x^2-1)(2x+4)}{(1-3x)(2-5x)}>0$. $\left[-2<x<-1 \vee \frac{1}{3}<x<\frac{2}{5} \vee x>1\right]$

36 $\frac{x-a}{x-2a+3}>0$. $\left[\begin{array}{l} a<3 \rightarrow x<2a-3 \vee x>a \\ a=3 \rightarrow \forall\ x \neq 3 \\ a>3 \rightarrow x<a \vee x>2a-3 \end{array}\right]$

37 $\frac{x-6+11a}{3a-2-x}<2$. $\left[\begin{array}{l} \text{se } a<\frac{4}{7} \rightarrow x<3a-2 \vee x>\frac{2-5a}{3} \\ \text{se } a=\frac{4}{7} \rightarrow \forall\ x \neq -\frac{2}{7} \\ \text{se } a>\frac{4}{7} \rightarrow x<\frac{2-5a}{3} \vee x>3a-2 \end{array}\right]$

38 $\dfrac{b}{b+1} > \dfrac{1+x}{x}$.

$$\left[\begin{array}{l} b < -1:\ x < 0 \vee x > -(b+1) \\ b > -1:\ -(b+1) < x < 0 \end{array}\right]$$

39 $\dfrac{1+x}{2x} > \dfrac{1}{b}$.

$$\left[\begin{array}{l} b < 0 \vee b > 2:\ x < \dfrac{b}{2-b} \vee x > 0 \\ 0 < b < 2:\ 0 < x < \dfrac{b}{2-b} \\ b = 2:\ x > 0 \end{array}\right]$$

40 $\begin{cases} \dfrac{2}{3} > \dfrac{1+x}{x} \\ \dfrac{1+x}{2x} + 2 > 0. \end{cases}$

$$\left[-3 < x < -\frac{1}{5}\right]$$

41 $\begin{cases} \dfrac{1-x}{2-x} > 0 \\ 4x+1 > 3\left(x+\dfrac{1}{2}\right) \\ \dfrac{9x-6(x+1)-4}{2x-8} > \dfrac{1}{2}. \end{cases}$

$$\left[\frac{1}{2} < x < 1 \vee 2 < x < 3 \vee x > 4\right]$$