Equazioni fratte parametriche

fra parentesi graffe i valori del parametro per i quali l'equazione è impossibile o indeterminata

i.	$\frac{x+6}{x+6-m}=\frac{x-2m+5}{x-4m+6}$	$x=\frac{-2m^2-7m+6}{m-1}$	$\left\{0,\frac{1}{2},1\right\}$
ii.	$\frac{x+2}{x+a+2}=\frac{2+x}{x+6a-5}$	$x=-2$	$\left\{0,\frac{7}{6}\right\}$
iii.	$\frac{x+6}{x-a+6}=\frac{x-2a+6}{x-4a-1}$	$x=-\frac{2(a^2+3a+21)}{a+7}$	$\left\{-7,-\frac{7}{2},-\frac{7}{3},0\right\}$
iv.	$\frac{x+1}{m+x+1}=\frac{-8m+x+1}{6m+x-3}$	$x=\frac{-8m^2-13m+4}{13m-4}$	$\left\{0,\frac{2}{7},\frac{4}{13},\frac{4}{5}\right\}$
v.	$\frac{x-9k+4}{k+x+4}=\frac{x+4k+4}{6k+x-1}$	$x=\frac{-58k^2+13k-20}{8k+5}$	$\left\{-\frac{5}{8},0,1,\frac{5}{2}\right\}$
vi.	$\frac{x-9c+3}{c+x+3}=\frac{4c+x+3}{6c+x-3}$	$x=\frac{-29c^2+15c-9}{4c+3}$	$\left\{-\frac{3}{4},0,\frac{6}{5},3\right\}$
vii.	$\frac{x-k-2}{x-5k-2}=\frac{x-4k-1}{-7k+x-2}$	$x=\frac{13k^2-3k-2}{k-1}$	$\left\{-\frac{1}{3},0,1\right\}$
viii.	$\frac{-3a+x-3}{a+x-3}=\frac{-4a+x-1}{7a+x-3}$	$x=\frac{17a^2+23a-6}{7a-2}$	$\left\{0,\frac{2}{11},\frac{2}{7}\right\}$
ix.	$\frac{-3a+x-2}{a+x-2}=\frac{-4a+x-1}{7a+x-2}$	$x=\frac{17a^2+15a-2}{7a-1}$	$\left\{0,\frac{1}{11},\frac{1}{7}\right\}$
x.	$\frac{x+9}{-a+x+9}=\frac{-2a+x-1}{x+9}$	$x=\frac{2a^2-17a-90}{3a+10}$	$\left\{-5,-\frac{10}{3},0\right\}$
xi.	$\frac{x+9}{-c+x+9}=\frac{-c+x-1}{x+9}$	$x=\frac{c^2-8c-90}{2(c+5)}$	$\{-10,-5,0\}$
xii.	$\frac{-2k+x+9}{-k+x+9}=\frac{-k+x-1}{x+9}$	$x=\frac{1}{10}\left(k^2+10k-90\right)$	$\{-10,0\}$
xiii.	$\frac{-2m+x+5}{-m+x+5}=\frac{x-5}{-2m+x+5}$	$x=\frac{4m^2-25m+50}{3m-10}$	$\left\{0,\frac{10}{3},5\right\}$
xiv.	$\frac{3k+x+5}{-k+x+5}=\frac{-k+x-2}{x+5}$	$x=\frac{k^2-18k-35}{5k+7}$	$\left\{-7,-\frac{7}{5},0\right\}$
xv.	$\frac{x+1}{-b+x+1}=\frac{-b+x-2}{x+1}$	$x=\frac{b^2+b-3}{2b+3}$	$\left\{-3,-\frac{3}{2},0\right\}$
xvi.	$\frac{x+3}{-a+x+3}=\frac{x-4a}{x+3}$	$x=\frac{4a^2-12a-9}{5a+3}$	$\left\{-\frac{3}{4},-\frac{3}{5},0\right\}$

xvii. $\frac{x^2-(2+k)x+1+k}{x+2k-1}=x-2-k$ $x=\frac{6k-1}{3k-1}$ $\left\{-\frac{1}{6},0,\frac{1}{3}\right\}$

xviii. $\frac{2x+5a+1}{1-a-x}=a+2$ $x=\frac{1-6a-a^2}{a+4}$ $\{-4,-1\}$

xix. $\frac{x-3k}{x+2k+5}=2k+1$ $x=-\frac{4k^2+15k+5}{2k}$ $\{-1,0\}$

xx. $\frac{2x+a+b}{x-a+b}=a-2b$ $x=\frac{3ab-a-b-a^2-2b^2}{2-a+2b}$ $\{a=2+2b,\ b=3a\}$

xxi. $\frac{x+3-k}{x-2k+1}=3-k$ $x=\frac{2k(k-3)}{k-2}$ $\{-2,\ 2\}$

xxii. $\frac{2x+3k}{x-k+1}=k-3$ $x=\frac{k^2-k+3}{k-5}$ $\left\{\frac{2}{5},\ 5\right\}$

xxiii. $\frac{x-2a}{x+a+1}=2a$ $x=\frac{2a^2}{1-2a}$ $\left\{\frac{1}{3},\frac{1}{2}\right\}$

xxiv. $\frac{5-3x}{1+k-x}=k+1$ $x=\frac{k^2+2k-4}{k-2}$ $\{-2,\ 2\}$

xxv. $\frac{x-a-b}{x-a-2b}=\frac{x-2a+b}{x-2a}$ se b=0 $x\neq a\ \wedge x\neq 2a$

xxvi. $\frac{x^2-10x-kx+25+5k-2k^2}{x-5}=x-2-k$ $x=\frac{15-2k^2}{3}$ $\{0\}$

xxvii. $\frac{x^2-2ax+a^2-b^2}{x-a-2b}=x-3a$ $x=\frac{2a^2+b^2+6ab}{2a+2b}$ $\{b=0\}$

xxviii. $\frac{x-2}{x-2+k}=\frac{x+5-2k}{x+5-3k}$ $x=\frac{2k-3}{2}$ $\left\{\frac{3}{8},\frac{7}{4}\right\}$

xxix. $\frac{x-6+k}{x+2k-6}=\frac{x+2k+2}{x-6}$ $x=\frac{2(2k^2-k-24)}{3k+8}$ $\{-4,\ 0\}$

xxx. $\frac{x+3k}{x-5k}=\frac{x+2}{x-k+2}$ $x=\frac{3k-16}{7}$ $\left\{se\ k=0\ \forall x\neq 0\wedge x\neq -2,-\frac{1}{2}\right\}$

xxxi. $\frac{x-1+2k}{x-1+k}=\frac{x+2}{x-1}$ $x=\frac{4k-3}{k-3}$ $\{0,\ 3\}$

xxxii. $\frac{2kx+1}{x-2k}=\frac{k}{k^2+1}$ $x=-\frac{1}{k}$ $\{0\}$

xxxiii. $\frac{x+5a+2}{x-6a+3}=\frac{6a+1}{2-5a}$ $x=a-1$ $\left\{\frac{1}{11},\frac{2}{5}\right\}$

xxxiv. $\frac{x+m+1}{x+m}=1+\frac{1}{m}$ $x=0$

xxxv. $\dfrac{bx+2}{1-bx+3b}=\dfrac{1}{b}$ $x=1/b$

xxxvi. $\dfrac{nx+n+1}{3nx+2}=\dfrac{n+3}{8}$ $x=\dfrac{2}{n}$

xxxvii. $\dfrac{x+3p}{x-1}=1-p-3p^2$ $x=1-\dfrac{1}{p}$ $\left\{-\dfrac{1}{3}\right\}$

xxxviii. $\dfrac{r-x}{1+2x}=\dfrac{r^2-r+3}{3r-6}$ $x=\dfrac{r-3}{r}$

xxxix. $\dfrac{x+2}{x+u}=\dfrac{2u+1}{3u-1}$ $x=2u-1$ $\left\{\dfrac{1}{3},\,2\right\}$

xl. $\dfrac{x+v+1}{x+2v-2}=\dfrac{v^2+2v-1}{2v^2-v-1}$ $x=\dfrac{v-1}{v}$ $\left\{-\dfrac{1}{2},1,3\right\}$

xli. $\dfrac{2x-h}{3x-h+1}=\dfrac{h-6}{2h-8}$ $x=h-3$

xlii. $\dfrac{x+a^2}{x+a^2-2a}=a+1$ $x=2+2a-a^2$

xliii. $\dfrac{x+2}{x-c+1}=c^2-c$ $x=\dfrac{c^3-2c^2+c-2}{c^2-c-1}$ $\{-1\}$

xliv. $\dfrac{x-2q}{x-1+q}=q^2$ $x=\dfrac{q(q-2)}{1-q}$ $\{-1,1\}$

xlv. $\dfrac{x+1-s}{x+s}=1-s^2$ $x=\dfrac{-s^3+2s-1}{s^2}$ $\left\{0,\dfrac{1}{2}\right\}$