The method: Complex fractions

Multiply the top and the bottom by the LCD of all the small fractions. Then simplify.

$$\frac{\frac{1}{x}-\frac{1}{8}}{x-8}=\frac{8-x}{8x(x-8)}$$ multiply the top and the bottom by 8x

$$\frac{8-x}{8x(x-8)}=\frac{-(x-8)}{8x(x-8)}=\frac{-1}{8x}$$ $8-x=-(x-8)$; cancel $(x-8)$

$$\frac{1-\frac{4}{x}}{1-\frac{7}{x}}=\frac{x-4}{x-7}$$ multiply the top and the bottom by x

$$\frac{x-\frac{4}{x}}{1+\frac{2}{x}}=\frac{x^2-4}{x+2}$$ multiply the top and the bottom by x

$$\frac{x^2-4}{x+2}=\frac{(x+2)(x-2)}{x+2}=x-2$$ factor, then cancel $(x+2)$

Problems 1 and 2 worked out · Version 0A

$$\frac{x-\frac{1}{x}}{1+\frac{1}{x}}=\frac{x^2-1}{x+1}$$ multiply the top and the bottom by x

$$\frac{x^2-1}{x+1}=\frac{(x+1)(x-1)}{x+1}=x-1$$ factor, then cancel $(x+1)$

$$\frac{x-\frac{16}{x}}{1+\frac{4}{x}}=\frac{x^2-16}{x+4}$$ multiply the top and the bottom by x

$$\frac{x^2-16}{x+4}=\frac{(x+4)(x-4)}{x+4}=x-4$$ factor, then cancel $(x+4)$

Complex fractions · Version 0A

1) $x-1$ 2) $x-4$ 3) $x+4$ 4) $x-1$ 5) $\frac{x+2}{x-5}$

6) $x+8$ 7) $x-9$ 8) $x-4$ 9) $\frac{-1}{8x}$ 10) $\frac{x+2}{x-7}$

11) $x-9$ 12) $\frac{x-1}{x+9}$ 13) $x-4$ 14) $x+7$

15) $\frac{x-2}{x-1}$ 16) $\frac{-1}{7x}$ 17) $\frac{x-1}{x+7}$ 18) $\frac{-1}{4x}$ 19) $x-2$

20) $x-5$ 21) $\frac{-6x+1}{3x+2}$ 22) $\frac{-6x+3}{5x+2}$ 23) $x-9$

24) $x+9$ 25) $\frac{-3x+4}{2x+7}$ 26) $x-4$ 27) $x-6$

28) $x+5$ 29) $\frac{-1}{2x}$ 30) $\frac{x+6}{x+2}$