Name	Klasse	Datum		Seite
1. Stegreifaufgabe	BVKT1	16.10.12		Blatt

1. $\big((x-3)\cdot 2 - 3(2-x)\big)\cdot 5 - 3 = -2^2 - (-1)^2$

$\Leftrightarrow (2x-6-6+3x)\cdot 5 - 3 = -2^2 - 1$ $\qquad D = \mathbb{R}$

$\Leftrightarrow (5x-12)\cdot 5 - 3 = -4 - 1$

$\Leftrightarrow 25x - 63 = -5$

$\Leftrightarrow 25x = 58 \Leftrightarrow x = \frac{58}{25}$; $\quad L = \{\frac{58}{25}\}$

2. $\frac{4}{4x-3} = \frac{3}{3x-4}$

$4x-3=0 \Leftrightarrow x = \frac{3}{4}$

$3x-4=0 \Leftrightarrow x = \frac{4}{3}$

$\Leftrightarrow 4(3x-4) = 3(4x-3)$

$\Leftrightarrow 12x - 16 = 12x - 9$

$\Leftrightarrow -16 = -9$ (f) $\Rightarrow L = \{\}$

$D = \mathbb{R} \setminus \{\frac{3}{4}; \frac{4}{3}\}$

3. $\frac{a}{x} + 1 = b$

$\Leftrightarrow \frac{a}{x} = b - 1$

$\Leftrightarrow a = (b-1)x$

$\Leftrightarrow x = \frac{a}{b-1}$; $\quad L = \{\frac{a}{b-1}\}$

4. $\frac{x - 2(a-x)}{x+2} = a$

$\Leftrightarrow x - 2(a-x) = a(x+2)$

$\Leftrightarrow x - 2a + 2x = ax + 2a$

$\Leftrightarrow x + 2x - ax = 2a + 2a$

$\Leftrightarrow 3x - ax = 4a$

$\Leftrightarrow x(3-a) = 4a$

$\Leftrightarrow x = \frac{4a}{3-a}$; $\quad L = \{\frac{4a}{3-a}\}$

5. $(3xy - xy^{-1})^2 - xy^2x$

$= 9x^2y^2 - 2\cdot 3xyxy^{-1} + x^2y^{-2} - xy^{22}$

$= 8x^2y - 6x^2 + x^2y^{-2}$