

Löse die angegebenen Gleichungen. Gib Definitions- und Lösungsmenge an! $G = \mathbb{R}$!

$$1. \frac{4}{6x-9} - \frac{7}{24x} = \frac{3}{8x-16}$$

$$2. \frac{2}{x^2-9} - \frac{1}{x^2+3x} + \frac{1}{x^2-3x} = 0$$

$$3. \frac{9}{9-x^2} + \frac{1}{x-3} = \frac{x}{x^2+6x+9}$$

$$4. \frac{x-1}{2x-6} - \frac{6x+11}{6x^2+18x} = \frac{x^2-1}{2x^2-18}$$

$$5. \frac{3x^2+7}{3x^2-12} - \frac{3x-1}{3x-6} = \frac{-10x-3}{6x^2+12x}$$

$$6. \frac{4}{x-2} + \frac{3}{x+2} = \frac{7x+2}{x^2-4}$$

$$7. \frac{x+1}{8x-12} - \frac{2x-5}{16x-24} = \frac{1}{8x}$$

$$8. \frac{1}{x^2-2x} - \frac{1}{x^2+2x} = \frac{2}{x^2-4}$$

$$9. \frac{1}{x-4} - \frac{4}{x^2-8x+16} = \frac{1}{x}$$

$$10. \frac{2}{x^2+6x+9} = \frac{1}{x} - \frac{x+1}{x^2+3x}$$

$$11. \frac{x+3}{x^2-2x} + \frac{x+2}{x^2-3x} = \frac{2x}{x^2-5x+6}$$

$$12. \frac{x}{x-1} + \frac{x+1}{x-2} = \frac{2x^2-x}{x^2-3x+2}$$

LÖSUNGEN:

$$1. L = \left\{ \frac{7}{2} \right\}, D = \mathbb{R} \setminus \left\{ \frac{3}{2}, 0, 2 \right\}$$

$$2. L = \{ \}, D = \mathbb{R} \setminus \{ -3, 0, 3 \}$$

$$3. L = \{ \}, D = \mathbb{R} \setminus \{ -3, 3 \}$$

$$4. L = \{ -33 \}, D = \mathbb{R} \setminus \{ -3, 0, 3 \}$$

$$5. L = \{ 6 \}, D = \mathbb{R} \setminus \{ -2, 0, 2 \}$$

$$6. L = D = \mathbb{R} \setminus \{ -2, 2 \}$$

$$7. L = \left\{ -\frac{3}{5} \right\}, D = \mathbb{R} \setminus \left\{ 0, \frac{3}{2} \right\}$$

$$8. L = \{ \}, D = \mathbb{R} \setminus \{ 0, 2 \}$$

$$9. L = \{ \}, D = \mathbb{R} \setminus \{ 0, 4 \}$$

$$10. L = \{ \}, D = \mathbb{R} \setminus \{ -3, 0 \}$$

$$11. L = \{ \}, D = \mathbb{R} \setminus \{ 0, 2, 3 \}$$

$$12. L = \{ -1 \}, D = \mathbb{R} \setminus \{ 1, 2 \}$$