

M4/B1 Bruchgleichungen / Zusatzaufgaben (Fortsetzung)

Überall gilt  $G = \mathbb{Q}$

$$17. \frac{5}{x-1} - \frac{3x-4}{x^2-2x+1} = \frac{2x+5}{x^2-1}$$

$$18. \frac{3+7x}{1+x} - \frac{4-9x}{1-x} + 6 = \frac{-(4x^2+13)}{1-x^2}$$

$$19. \frac{x-1}{x+1} = \frac{x^2-3}{x^2+2x-4}$$

$$20. \frac{2x-5}{4x^2-4x+1} = \frac{7x-6}{6x^2-3x} - \frac{2}{3x}$$

$$21. \frac{6x-19}{2x+6} - \frac{3x}{x-3} = \frac{1}{x^2-9}$$

$$22. \frac{12x^2-14x+3}{9x^2-12x+4} - \frac{5x+1}{15x-10} = 1$$

$$23. \frac{2x^2-x-4}{x^2+2x-3} - \frac{3x-4}{3x-3} = \frac{2x-5}{2x+6}$$

$$24. \frac{x+4}{x^2-1} - \frac{5-x}{x^2-x} + \frac{2x^2+5x-11}{x-x^3} = 0$$

$$25. \frac{1}{x-2} + \frac{2}{x+1} = \frac{3}{x+3}$$

$$26. \frac{1-\frac{3}{x}}{\frac{x}{3}-2} = \frac{2}{x}$$

$$27. \frac{\frac{x}{3}+3}{x-\frac{1}{2}} = \frac{\frac{x}{6}+\frac{1}{2}}{\frac{1}{2}(x-2)}$$

$$28. \frac{1-\frac{1}{x}}{2x-\frac{3x}{x+2}} + \frac{2}{x^2} = \frac{x^2-1}{x^2}$$

$$29. 2 - \frac{9}{x+13} = \frac{\frac{5}{x} - \frac{3}{x+3}}{\frac{3}{x} - \frac{2}{x+3}}$$

$$30. \frac{\frac{x}{6} - \frac{1}{2}}{\frac{x}{6} + 1\frac{1}{3}} - \frac{x-2}{x} = \frac{5}{3x}$$

$$31. \frac{(x-1)(x-2)}{x-3} = \frac{(x-3)^2}{x-6}$$

$$32. \frac{2x-3}{2x-1} - \frac{2x-5}{2x-7} = 1 - \frac{4(x^2-1)}{4x^2-16x+7}$$

$$33. 1 + \frac{1-x}{1+x-\frac{4x}{1+x}} = \frac{1}{x}$$

$$34. \frac{x^2}{x^2-6x+8} - \frac{x+1}{x-4} + \frac{x}{3x-6} = \frac{1}{3}$$

$$35. \frac{2}{\frac{1}{x}-2} + \frac{5}{x-3} + 1 = 0$$

$$36. \frac{1+\frac{1}{x}}{\frac{x-1}{x+1}} = \frac{8x+5}{4x} - \frac{\frac{3x-4}{x-1}}{\frac{3x}{x+1}}$$

$$37. \frac{2}{x^2+4x+4} - \frac{1}{x^2-3x-10} = \frac{1}{(x-5)^2}$$

$$38. \frac{2x-7}{6+4x} - \frac{x+7}{3-2x} = 1 + \frac{51}{4x^2-9}$$

$$39. \frac{8}{a-4} - \frac{64}{a^2-16} = \frac{5}{a+4}$$

**Lösungen**

17.  $L = \{2\}$

18.  $L = \{-2\}$

19.  $L = \{\frac{7}{3}\}$

20.  $L = \{-1\}$

21.  $L = \{1\}$

22.  $L = \{-1\}$

23.  $L = \{3\}$

24.  $L = \{1\frac{1}{5}\}$

25.  $L = \{\frac{1}{3}\}$

26.  $L = \{-3\}$

27.  $L = \{3\frac{2}{3}\}$

28.  $L = \{-\frac{1}{5}\}$

29.  $L = \{-7\}$

30.  $L = \{\frac{1}{4}\}$

31.  $L = \{2\frac{1}{7}\}$

32.  $L = \{-\frac{5}{8}\}$

33.  $L = \{\frac{1}{3}\}$

34.  $L = \{\frac{2}{5}\}$

35.  $L = \{\frac{2}{9}\}$

36.  $L = \{-\frac{11}{29}\}$

37.  $L = \{2\frac{2}{3}\}$

38.  $x = 1,5 \quad L = \{\}$  (Definitionsbereich beachten!)