



UNIVERSITÄTS-
BIBLIOTHEK
PADERBORN

Algebra

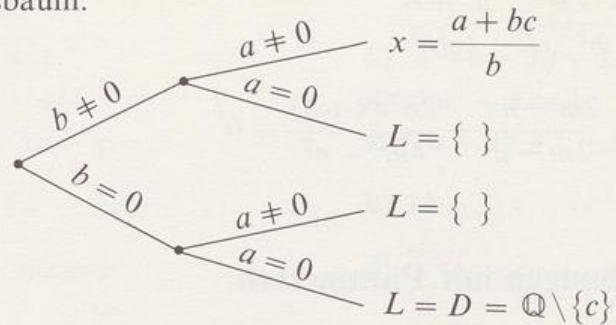
Barth, Friedrich

München, 1999

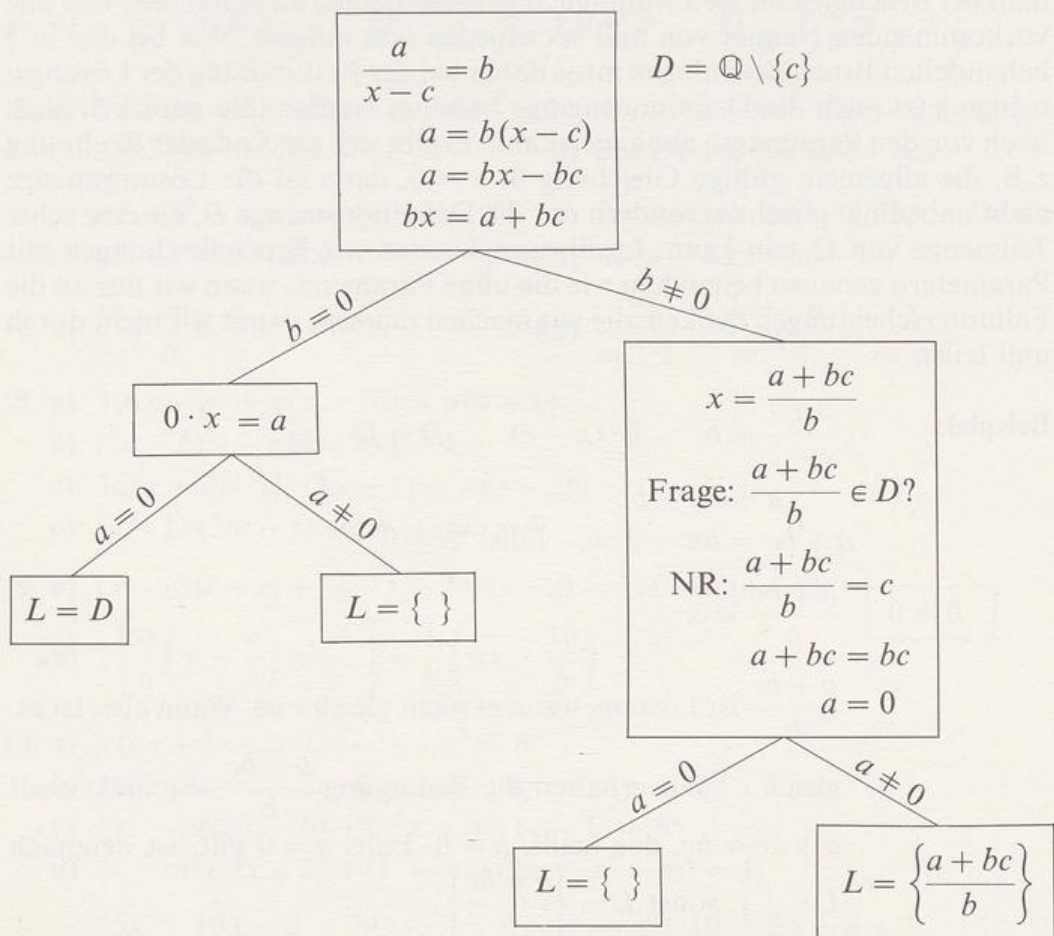
Aufgaben

[urn:nbn:de:hbz:466:1-83513](https://nbn-resolving.org/urn:nbn:de:hbz:466:1-83513)

Lösungsbaum:



Der Rechenbaum sieht folgendermaßen aus:



Aufgaben

1. a) $\frac{a}{x} = b$

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

c) $\frac{a}{x-b} = b$

2. a) $\frac{x-1}{x+1} = a$

b) $\frac{a}{x} + \frac{b}{x} = a+b$

c) $\frac{1}{x} - \frac{1}{a} = \frac{2}{x}$

$$3. \text{ a) } \frac{x-1}{x-a} + \frac{x+1}{x+a} = 2$$

$$\text{b) } \frac{x+2}{x-a} - \frac{x-2}{x+a} = 0$$

$$4. \text{ a) } \frac{x+a}{x-a} = \frac{a+b}{a-b}$$

$$\text{b) } \frac{2a-b}{a-2b} = \frac{x-a}{a-x}$$

$$5. \text{ a) } \frac{x-a}{x+a} = 2 - \frac{x+a}{x-a}$$

$$\bullet \text{ b) } \frac{x-2a}{x+2b} - \frac{x+2a}{x-2b} = -\frac{a+b}{x^2-4b^2}$$

$$6. \text{ a) } \frac{1+ax}{1+2ax} = 2$$

$$\text{b) } \frac{2}{a-x} = \frac{2a}{b(b-x)}$$

$$7. \bullet \text{ a) } \frac{a+b}{b-ax} + \frac{b-a}{a+bx} = 0$$

$$\text{b) } \frac{a-b}{x-b} + \frac{a+b}{x+b} = \frac{1-2b^2}{x^2-b^2}$$

$$8. \text{ a) } \frac{5b}{x-a} + \frac{2b}{a+x} = \frac{4ab}{a^2-x^2}$$

$$\bullet \text{ b) } \frac{a}{a^2-x^2} - \frac{1}{a+x} = \frac{1}{a-x} - \frac{b+1}{a+x}$$

$$9. \frac{1}{a-2x} - \frac{a-1}{a^2+2ax} = \frac{4a-1}{a^2-4x^2}$$

$$10. \frac{1}{1-a^2x^2} = \frac{1}{1+ax} - \frac{1}{1-ax}$$

$$\bullet 11. \frac{4x+b}{4x-b} - \frac{4x-b}{4x+b} = \frac{bx-15}{16x^2-b^2}$$

$$\bullet 12. \frac{x+a}{x-a} - \frac{4a-x}{x^2-a^2x} + \frac{x-a}{x} = 2 + \frac{ax+a^2}{x^2-ax}$$

$$\bullet 13. \frac{a-x}{x} - \frac{2ab^2-2b^2x}{a^2x+b^2x-2abx} = \frac{bx+a^2}{x(a-b)} - \frac{a+b}{a-b}$$

$$\bullet 14. \left(\frac{3x^2-ax}{a+x} + a-3x \right) : \frac{3ax-a^2}{x^2-a^2} = (a-x)a$$

$$15. \frac{x-a}{a} - \frac{2x}{a-x} = 2 + \frac{1}{\frac{a^2+ax}{x^2}}$$

$$\bullet 16. \frac{1 - \frac{a}{a+x}}{1 + \frac{a}{a+x}} = \frac{2x+a}{2a+x}$$

$$\bullet 17. \frac{\frac{1}{a} - \frac{1}{x+c}}{\frac{1}{a} + \frac{1}{x+c}} = \frac{\frac{1}{c} + \frac{1}{a+x}}{\frac{1}{c} - \frac{1}{a+x}}$$