

Lösungen zu den Übungsaufgaben für die 2. Schularbeit

1. $h = 20\text{cm}, e = 52\text{cm}, A = 1020\text{cm}^2$
2. $h = 40\text{cm}, e = 50\text{cm}, A = 1860\text{cm}^2$
3. $h = 45\text{cm}, f = 75\text{cm}, A = 2610\text{cm}^2$
4. $h = 16\text{cm}, f = 34\text{cm}, A = 888\text{cm}^2$
5. - - - -
6. $f = 80\text{cm}, A = 2040\text{cm}^2$
7. $f = 48\text{cm}, A = 5112\text{cm}^2$
8. $f = 112\text{cm}, A = 6888\text{cm}^2$
9. $f = 288\text{cm}, A = 21168\text{cm}^2$
10. $x \neq -3, x \neq -2, x \neq -1,$
ET: $\frac{2}{(x+1)(x+2)(x+3)},$ PR: $\frac{1}{12}$
11. $x \neq -10, x \neq -7, x \neq -4,$
ET: $\frac{1}{(x+4)(x+10)},$ PR: $-\frac{1}{5}$
12. $x \neq -7, x \neq -6, x \neq -5,$
ET: $\frac{2}{(x+5)(x+6)(x+7)},$ PR: $\frac{1}{3}$
13. $x \neq -16, x \neq -11, x \neq -6,$
ET: $\frac{1}{(x+6)(x+16)},$ PR: $-\frac{1}{16}$
14. AT: $\frac{1}{x+a-1} - \frac{2}{x+a} + \frac{1}{x+a+1},$
ET: $\frac{2}{(x+a+1)(x+a)(x+a-1)}$
15. AT: $\frac{1}{(x+a+b)(x+2a)} - \frac{1}{(x+2a)(x+2b)} + \frac{1}{(x+a+b)(x+2b)},$
ET: $\frac{1}{(x+2a)(x+2b)}$
16. AT: $\frac{1}{(x+a)^2} + \frac{1}{(x+b)^2} - \frac{2}{(x+a)(x+b)},$
ET: $\frac{(a-b)^2}{(x+a)^2(x+b)^2}$
17. AT: $\frac{x+a}{(x+b)^2} - \frac{x+b}{(x+a)^2} + \frac{3(b-a)}{(x+a)(x+b)},$
ET: $\frac{(a-b)^3}{(x+a)^2(x+b)^2}$
18. AT: $\frac{1}{x^2+ax} + \frac{1}{x^2+bx} - \frac{1}{x^2},$ ET: $\frac{x^2-ab}{x^2(x+a)(x+b)}$
19. $D = \mathbb{R} \setminus \{-11; 11\},$
 $L = \{ \}$ wegen $x \notin D$
20. $D = \mathbb{R} \setminus \{-9; 9\}, L = \{ \}$ wegen f.A.
21. $D = \mathbb{R} \setminus \{-11; -10; -7\}, L = \{-13\}$
22. $D = \mathbb{R} \setminus \{-12; 12\}, L = D$
23. $D = \mathbb{R} \setminus \{-8; 8\}, L = \{-2\}$
24. $D = \mathbb{R} \setminus \{-6; 0; 6\}, L = \{-18\}$
25. $D = \mathbb{R} \setminus \{-9; 0; 9\}, L = \{-18\}$
26. $D = \mathbb{R} \setminus \{-16; 0; 16\}, L = \{-24\}$
27. $D = \mathbb{R} \setminus \{-10; 0; 10\}, L = \{30\}$
28. $D = \mathbb{R} \setminus \{-11; 0; 11\}, L = \{-22\}$
29. $D = \mathbb{R} \setminus \{-13; 0; 13\}, L = \{-26\}$
30. $D = \mathbb{R} \setminus \{-15; 0; 15\}, L = \{30\}$
31. $D = \mathbb{R} \setminus \{-17; 0; 17\}, L = \{-34\}$
32. $D = \mathbb{R} \setminus \{-14; 0; 14\}, L = \{-28\}$
33. $x^2 - 24x + 64$
34. $p(x) = x^3 + x - 2$
35. $q(x) = x^2 + x + 2$
36. $x^2 + x - 2$
37. $x^2 + 4x + 9$
38. $p(x) = x^4 + \sqrt{3} \cdot x^3 + 2x^2 + \sqrt{3} \cdot x + 1$
39. $q(x) = x^2 + 1$
40. $r(x) = x^4 - x^2 + 1$
41. $x^2 - 5x + 10$
42. $x^3 + x - 30$
43. $x + 30$
44. $x^3 + 2x^2 + 3$
45. $x - 2$
46. $x^2 + 3x - 4$
47. $x^3 + 4x - 12$
48. $x^2 - 2x + 4$
49. $x^3 + 2x^2 - 8$
50. $x^2 + 2x + 3$
51. $x^4 - 3x^2 + 9$