

Thema: Rechnen mit Brüchen

Fach: Math.

Kl.:

Blatt 2

c) Kürzen von Bruchtermen

Vereinfachen Sie folgende Bruchterme durch Kürzen.

36. $\frac{14ax}{7ay}$

43. $\frac{(ab-ax)x \cdot (a-b)}{ax(2b-2a)}$

50. $-\frac{n+\frac{m}{2}}{(-2n-m) \cdot 4}$

37. $\frac{48ax}{-12x}$

44. $\frac{-3+x}{2(x-3)}$

51. $\frac{(5x-7y)(x-1)}{(25x^2-49y^2)(-1+x)}$

38. $\frac{39x}{13ax}$

45. $-\frac{a-1}{1-a}$

52. $\frac{4a^2+b^2-4ab}{-(2a-b)(a-2b)}$

39. $\frac{-6}{12ax}$

46. $\frac{(-n-1)}{(-n+2)(n+1)}$

53. $\frac{a^2-1+a+1}{a(a+1)}$

40. $\frac{3a+3b}{6}$

47. $\frac{-2a+12b-8}{-2}$

54. $\frac{1-\sin^2\alpha}{\sin\alpha+1}$

41. $\frac{4x-4y}{4}$

48. $\frac{(3x-1)(2a+1)}{a(1+2a)(-1+3x)}$

55. $\frac{\sin^2\alpha+\cos^2\alpha-\tan^2\alpha}{1+\tan^2\alpha}$

42. $\frac{2a+6b}{3a+9b}$

49. $\frac{(x^2-1)(a-1)^2}{(x-1)(a^2-2a+1)}$

56. $\frac{2\sin^2\alpha-2}{\sin\alpha+1}$

d) Multiplizieren und Dividieren von Bruchtermen

57. $\frac{2ax}{4n} \cdot \frac{12mn}{3a} \cdot \frac{2}{(-x)}$

67. $\frac{\frac{1}{\sin x}}{\frac{2}{3\sin x}} \cdot \frac{\tan x}{3}$

74. $\frac{\left(y-\frac{1}{x}\right) \cdot \frac{xy+1}{x}}{\left(y+\frac{1}{x}\right) \cdot \frac{1}{2x}}$

58. $\frac{a-1}{2} \cdot \frac{3}{a-1}$

68. $\frac{1-\sin^2 x}{\cos^2 x} \cdot \frac{\sin x}{2}$

75. $\frac{\left(-\frac{1}{x}\right) - \left(-\frac{1}{y}\right)}{\left(-\frac{1}{y}\right) - \frac{1}{x}}$

59. $\frac{ax^2-a}{2a} \cdot \frac{12}{x-1}$

69. $\frac{\frac{1}{a} - \frac{1}{b}}{\frac{1}{a} + \frac{1}{b}}$

76. $\frac{2+a}{-x-1} : \frac{(x+1)(4+a^2+4a)}{(2+a)(-x-1)}$

60. $\frac{a-1}{x-n} \cdot \frac{n-x}{2a-2} \cdot \left(\frac{-1}{2}\right)$

70. $\frac{2+\frac{x}{y}+\frac{y}{x}}{y+x}$

77. $\frac{\frac{a}{2x}-1}{\frac{a}{2y}+1} : \frac{1}{\frac{1}{2y}}$

61. $\frac{m+n}{2a} \cdot \frac{1ax}{n-m} \cdot \frac{2}{n^2-m^2}$

71. $\frac{\frac{x^2-1}{a^2}}{-x+1}$

62. $\frac{x+1}{ab} \cdot \frac{x-1}{x} \cdot \frac{abx}{(x-1)^2}$

72. $\frac{\frac{\sin\alpha-\cos\alpha}{1-\sin\alpha}}{\frac{\sin^2\alpha-\cos^2\alpha}{1-\sin^2\alpha}}$

63. $\frac{x^2-y^2}{x+y} \cdot \frac{2a}{x-y}$

73. $\frac{\frac{2a}{n} \cdot \left(\frac{x}{2m} + \frac{4x}{3m}\right)}{\frac{3x}{m} \cdot \left(\frac{2a}{n} - \frac{a}{6n}\right)}$

64. $\frac{xy}{x+y} \cdot \left(\frac{1}{x} - \frac{1}{y}\right)$

65. $\left(\left(\frac{1}{x}\right)^2 - \left(\frac{1}{y}\right)^2\right) \cdot \frac{1}{\frac{1}{x} + \frac{1}{y}}$

66. $\left(\frac{1}{x} + \frac{1}{y}\right)^2 \cdot \frac{xy}{x+y}$