

Bestimmen Sie die Lösungsmengen der Gleichungssysteme!

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|---|--|---|
| <p>1. $7x - 5y = 24$
$5x + y = 40$</p> | <p>2. $5x - 2y = 19$
$x + 2y = -1$</p> | <p>3. $4x - 2y = 8$
$5x - 6y = 24$</p> |
| <p>4. $6x - 4y = 8$
$9x - 6y = 12$</p> | <p>5. $-3x + 5y = -16$
$3x - 7y = 32$</p> | <p>6. $2x + 5 = 3y + 10$
$3x - 4 = 2y - 4$</p> |
| <p>7. $3x + 2y = 7a + 8b$
$9x - 6y = -3a + 12b$</p> | <p>8. $2ax + 5ay = 5a^2 + ab$
$4bx + 3by = 3ab + 9b^2$</p> | |
| <p>9. $2ax + 3bx - 4ay + 2by = 4a^2 - 6ab + 6b^2$
$5ax - 2bx + 3ay - 3by = 10a^2 + 5ab - 9b^2$</p> | <p>10. $2ax + 3bx + 4ay - 13by = 2a^2 + 7ab + 6b^2$
$5ax - 10bx + 2ay - 5by = 5a^2 - 20b^2$</p> | |
| <p>11. $3x - 2y - z = -5$
$4x + 2y - 3z = -4$
$x - 2y + 5z = 17$</p> | <p>12. $2x + y - 3z = 4$
$x + y - 2z = 5$
$3x + 3y + 5z = -18$</p> | <p>13. $4x + 5y - 4z = -61$
$4x - 3y + z = 17$
$2z + 3x + 3y = 25$</p> |
| <p>14. $4x + 3y + z = 0$
$3x + 4y + 5z = 0$
$x - 2y + z = 0$</p> | <p>15. $2ax + ay + z = a$
$ax + 0,5by + bz = b^2$
$ax + 2ay - 2bz = ab$</p> | <p>16. $5x - 3y + 4z = 1$
$2x + 4y - 2z = -14$
$3x - 5y + 3z = 3$</p> |
| <p>17. $abx - 2aby + 2bz = 3ab$
$-2ax + 4by + 10z = a - 4b$
$3bx - 6ay = 0$</p> | <p>18. $2ax - by = 4a^2 + b^2$
$2b(x + y) - a(x - y) = 6ab$</p> | |
| <p>19. $2x_1 + 3x_2 + 3x_4 = 3$
$3x_1 - 2x_3 - 4x_4 = 3$
$4x_2 - x_3 + 4x_4 = -3$
$3x_1 + 2x_2 + x_3 = 2$</p> | <p>20. $5x_1 + 3x_2 - 4x_3 + x_4 = 3$
$x_1 - 2x_2 - 2x_3 + 3x_4 = 3$
$2x_1 - 2x_2 + 2x_3 = 8$
$6x_1 - 5x_2 - 8x_3 + 2x_4 = 20$</p> | |

Lösungen:

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|-----------------------|--|-----------------------|-----------------------|
| 1. $x=7; y=5$ | 2. $x=3; y=-2$ | 3. $x=0; y=-4$ | 4. unterbestimmt |
| 5. $x=-8; y=-8$ | 6. $x=-2; y=-3$ | 7. $x=a+2b; y=2a+b$ | 8. $x=3b; y=a-b$ |
| 9. $x=2a; y=3b$ | 10. $x=a+2b; y=0$ | 11. $x=1; y=2; z=4$ | 12. $x=-4; y=3; z=-3$ |
| 13. $x=0; y=-1; z=14$ | 14. $x=0; y=0; z=0$ | 15. $x=-b; y=2b; z=a$ | |
| 16. $x=-3; y=0; z=4$ | 17. $x = \frac{2a}{a-b} \quad y = \frac{b}{a-b} \quad z = \frac{a}{2}$ | | |
| 18. $x=2a+b; y=2a-b$ | 20. $x_1=2; x_2=-2; x_3=0; x_4=-1$ | | |