

Lineare Gleichungssysteme lösen

Übungsaufgaben

erzeugt auf: <http://home.t-online.de/home/arndt.bruenner/mathe/scripts/gleichungssysteme.htm>

$$(1) \quad \left| \begin{array}{l} -3n = 21 \\ 15 - 3q = 3n \\ 3q + 4p + 2m + r = -9n + 4 \\ 8 + 2p = 6q + 6n \\ 3q = -13 - 2m - 3n \end{array} \right|$$

$$(2) \quad \left| \begin{array}{l} -3n = 14 - 4e \\ -15,5 + e + 4w = 3b \\ -4e + 4w + 3n = -8 + 3b \\ -8w + 9,5 = 5i \\ -5i - 8e + 1,5 = 4w - 6n \end{array} \right|$$

$$(3) \quad \left| \begin{array}{l} 4q = 8 - 8n + 20r \\ -13,5 = 5r + 3p - 10m \\ 0 = -10r + 4q + 4n + 18 \\ 4q - 10r = 5m - 4n - 3p - 6,5 \\ 4q - 17 = 15r - 4n \end{array} \right|$$

$$(4) \quad \left| \begin{array}{l} -5 - 4n = -3m - 4p + 8q \\ -3 = r - 8q + 4p - 4n + 6m \\ 2n + 4q + 10 = -6m \\ -4q = -48 \\ -4 + 2r - 6m - 4p + 4q = -2n \end{array} \right|$$

$$(5) \quad \left| \begin{array}{l} -2 + 4y + 4z = 10w - 8u \\ -2 = -24y + 5x \\ 4z - 10w - 10 = -8u \\ 4u - 5w + 17 = 0 \\ -5 + 10u = 10w \end{array} \right|$$

$$(6) \quad \left| \begin{array}{l} -1 - 2r + 8q + 2m - 4n = 5p \\ -4q + 2n + r = 2m - 5p - 8 \\ -m = -15 - 5p \\ 2n = -26 \\ -5p + 2m - 2n + 4q - 7 = 2r \end{array} \right|$$

$$(7) \quad \left| \begin{array}{l} -3c - 6b + 4a = 3d - e + 5 \\ b + 18 = -6a \\ 0 = e + 4a + 16 \\ -6b = 12 + 3c \\ 8a = -3b + 3e - 14 \end{array} \right|$$

$$(8) \quad \left| \begin{array}{l} -3b - 15,5 = -4a \\ 4a - 2b = -6 - 4c - 6e \\ -d + 4b - 6e + 2 = 8a + 4c \\ -8c = -11,5 - d + 15e \\ -9e = -4a + 3b + 4c - d + 1 \end{array} \right|$$

$$(9) \quad \left| \begin{array}{l} -5m = 17 - 8p + 2r \\ -5q + 17 = 8p \\ 10q - 15 = -5r - 10m \\ -32p - 12 = 5n + 20q \\ -r = 7 + 12p + 10q \end{array} \right|$$

$$(10) \quad \left| \begin{array}{l} 2e + 4c = -46 \\ -4d - 8c - 4a + 4 = 4e \\ -4c - 4d = 14 + 2e \\ 12d - 2b = -6 + 4a \\ -12d - 8c + 10 = 6e \end{array} \right|$$

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Lösungen

- (1) $m = -14$ $n = -7$ $p = 11$ $q = 12$ $r = 15$
- (2) $b = 10$ $e = 19/2$ $i = -25/2$ $n = 8$ $w = 9$
- (3) $m = -2$ $n = -11$ $p = 1/2$ $q = -11$ $r = -7$
- (4) $m = -5$ $n = -14$ $p = 15$ $q = 12$ $r = 7$
- (5) $u = 39/2$ $w = 19$ $x = -10$ $y = -2$ $z = 11$
- (6) $m = 0$ $n = -13$ $p = -3$ $q = -8$ $r = 1$
- (7) $a = -4$ $b = 6$ $c = -16$ $d = -3$ $e = 0$
- (8) $a = -10$ $b = -37/2$ $c = -15$ $d = 11$ $e = 19/2$
- (9) $m = 13$ $n = -16$ $p = 14$ $q = -19$ $r = 15$
- (10) $a = 16$ $b = 19$ $c = -13$ $d = 8$ $e = 3$