Lineare Gleichungen

Löse nach x auf

1) $8x + 3 = 32 + 6x$

2) $2x - 9 = 4x - 7$

3) $3x + 6 = 6 - 3x$

4) $8(x - 8) = 24x + 5$

5) $7(x - 2) = 28x + 4$

6) $7(x - 6) = -14x + 8$

7) $-4(x - 9) = -16x - 7$

Lösung

1) $8x + 3 = 32 + 6x \mid - 3$
$8x + 3 - 3 = 32 + 6x - 3$
$8x = 29 + 6x \mid - 6x$
$8x - 6x = 29 + 6x - 6x$
$2x = 29 \mid : 2$
$2x : 2 = 29 : 2$
$x = 14{,}5$

2) $2x - 9 = 4x - 7 \mid + 9$
$2x - 9 + 9 = 4x - 7 + 9$
$2x = 4x + 2 \mid - 4x$
$2x - 4x = 4x + 2 - 4x$
$-2x = 2 \mid : (-2)$
$-2x : (-2) = 2 : (-2)$
$x = -1$

3) $3x + 6 = 6 - 3x \mid - 6$
$3x + 6 - 6 = 6 - 3x - 6$
$3x = 0 - 3x \mid + 3x$
$6x = 0 \mid : 6$
$6x : 6 = 0 : 6$
$x = 0$

4) $8(x - 8) = 24x + 5$ | () auflösen
$8x - 64 = 24x + 5 \mid + 64$
$8x = 24x + 69 \mid -24x$
$-16x = 69 \mid : (-16)$
$x = -4{,}31$

5) $7(x - 2) = 28x + 4$ | () auflösen
$7x - 14 = 28x + 4 \mid + 14$
$7x = 28x + 18 \mid -28x$
$-21x = 18 \mid : (-21)$
$x = -0{,}86$

6) $7(x - 6) = -14x + 8$ | () auflösen
$7x - 42 = -14x + 8 \mid + 42$
$7x = -14x + 50 \mid +14x$
$21x = 50 \mid : 21$
$x = 2{,}38$

7) $-4(x - 9) = -16x - 7$ | () auflösen
$-4x + 36 = -16x - 7 \mid - 36$
$-4x = -16x - 43 \mid + 16x$
$12x = -43 \mid : 12$
$x = -3{,}58$