

### Aufgabe 1

$$\frac{4x-1}{2} = \frac{1}{6} | \cdot 2$$

$$(4x-1) = 2 \cdot \frac{1}{6}$$

$$4x-1 = \frac{2}{6} | +1$$

$$4x = \frac{8}{6} | : \frac{4}{6}$$

$$x = \frac{8 \cdot 4}{6 \cdot 4}$$

$$x = \frac{8 \cdot 1}{6 \cdot 4}$$

$$x = \frac{1}{3} = 0,33$$

P:

$$\frac{1}{6} = \frac{1}{6}$$

### Aufgabe 2

$$3(5x-6) - (x-7) + 2 = 13x - 2(x+10) + 29$$

$$15x - 18 - x + 7 + 2 = 13x - 2x - 20 + 29$$

$$14x - 9 = 11x + 9 | -11x$$

$$3x - 9 = 9 | +9$$

$$3x = 18 | :3$$

$$x = 6$$

P:

$$75 = 75$$

### Aufgabe 3

$$\frac{3}{4}x + \frac{7x+6}{15} = 5x - 3(x+3)$$

$$0,75x + \frac{7x+6}{15} = 5x - 3x - 9$$

$$0,75x + \frac{7x+6}{15} = 2x - 9 | -0,75x$$

$$\frac{7x+6}{15} = 1,25x - 9 | \cdot 15$$

$$7x+6 = 15 \cdot (1,25x - 9)$$

$$7x+6 = 18,75x - 135 | -7x$$

$$6 = 11,75x - 135 | +135$$

$$141 = 11,75x | :11,75$$

$$x = 12$$

P:

$$\frac{3}{4} \cdot 12 + \frac{7 \cdot 12 + 6}{15} = 5 \cdot 12 - 3(12 + 3)$$

$$9 + 6 = 60 - 45$$

$$15 = 15$$

### Aufgabe 4

$$35x - 6 - x - 7 + 2 = 13x - 2x + 10 + 29$$

$$34x - 11 = 11x + 39 | +11$$

$$34x = 11x + 50 | -11x$$

$$23x = 50 | :23$$

$$x = 2,17$$

P:

$$35 \cdot 2,17 - 6 - 2,17 - 7 + 2 = 13 \cdot 2,17 - 2 \cdot 2,17 + 10 + 29$$

$$62,78 = 62,87$$

*o.k. Rundung*

### Aufgabe 5

$$3[(5x-6) - (x-7)] + 2 = 13x - [2(x+10) + 29]$$

$$3[5x-6-x+7] + 2 = 13x - [2x+20+29]$$

$$3[4x+1] + 2 = 13x - 2x - 20 - 29$$

$$12x+3+2 = 11x-49$$

$$12x+5 = 11x-49 | -11x$$

$$x+5 = -49 | -5$$

$$x = -54$$

P:

$$3[(5 \cdot (-54) - 6) - (-54 - 7)] + 2 = 13 \cdot (-54) - [2(-54 + 10) + 29]$$

$$-643 = -643$$

### Aufgabe 6

$$\frac{2x-1}{4} + 4x = \frac{1}{6} \cdot (2x-1) \cdot 6$$

$$\frac{2x-1}{4} + 4x = (2x-1) | \cdot 4$$

$$(2x-1) + 4 \cdot 4x = 4 \cdot (2x-1)$$

$$2x-1+16x = 8x-4$$

$$18x-1 = 8x-4 | -8x$$

$$10x-1 = -4 | +1$$

$$10x = -3 | :10$$

$$x = -0,3$$

P:

$$\frac{2 \cdot (-0,3) - 1}{4} + 4 \cdot (-0,3) = \frac{1}{6} \cdot (2 \cdot (-0,3) - 1) \cdot 6$$

$$-1,6 = -1,6$$

### Aufgabe 10

$$(1,22 + 2,7x) \cdot 2 - (1,5x - 0,525) : 7,5 = 11,01 + 1,5 \quad (1,1x - 3,3)$$

$$2,44 + 5,4x - 0,2x + 0,07 = 11,01 + 1,65x - 4,95$$

$$2,51 + 5,2x = 6,06 + 1,65x | -1,65x$$

$$2,51 + 3,55x = 6,06 | -2,51$$

$$3,55x = 3,55 | :3,55$$

$$x = 1$$

P:

$$(1,22 + 2,7) \cdot 2 - (1,5 - 0,525) : 7,5 = 11,01 + 1,5 \quad (1,1 - 3,3)$$

$$7,84 - 0,13 = 11,01 - 3,3$$

$$7,71 = 7,71$$

### Aufgabe 8

$$3,5 \cdot (20,5x - 315) + 107,5 = 72,5x - \frac{61,5x - 410}{2} \mid *2$$

$$2 \cdot 3,5 \cdot (20,5x - 315) + 2 \cdot 107,5 = 2 \cdot 72,5x - 61,5x + 410$$

$$143,5x - 2205 + 215 = 145x - 61,5x + 410$$

$$143,5x - 1990 = 83,5x + 410 \mid +1990$$

$$143,5x = 83,5x + 2400 \mid -83,5x$$

$$60x = 2400 \mid : 60$$

$$x = 40$$

P:

$$3,5 \cdot (20,5 \cdot 40 - 315) + 107,5 = 72,5 \cdot 40 - \frac{61,5 \cdot 40 - 410}{2}$$

$$1875 = 1875$$

### Aufgabe 12

$$\frac{16}{2}(x - 0,5) - (3x + 2) = 142 \frac{1}{2} : 5 - 4 - 1,5(11 + 6x)$$

$$8x - 4 - 3x - 2 = 28,5 - 4 - 16,5 - 9x$$

$$5x - 6 = 8 - 9x \mid +9x$$

$$14x - 6 = 8 \mid +6$$

$$14x = 14 \mid : 14$$

$$x = 1$$

P:

$$\frac{16}{2}(1 - 0,5) - (3 \cdot 1 + 2) = 142 \frac{1}{2} : 5 - 4 - 1,5(11 + 6 \cdot 1)$$

$$-1 = -1$$

### Aufgabe 9

$$7,5(2x + 3) + (5x - 4) \cdot 12 - 3(3 + 4x) - (3x + 1) \cdot 1,5 = \frac{5(7x + 34,8)}{2}$$

$$15x + 22,5 + 60x - 48 - 9 - 12x - 4,5x - 1,5 = \frac{35x + 174}{2}$$

$$58,5x - 36 = \frac{35x + 174}{2} \mid *2$$

$$117x - 72 = 35x + 174 \mid -35x$$

$$82x - 72 = 174 \mid +72$$

$$82x = 246 \mid : 82$$

$$x = 3$$

P:

$$7,5(2 \cdot 3 + 3) + (5 \cdot 3 - 4) \cdot 12 - 3(3 + 4 \cdot 3) - (3 \cdot 3 + 1) \cdot 1,5 = \frac{5(7 \cdot 3 + 34,8)}{2}$$

$$67,5 + 132 - 45 - 15 = 139,5$$

$$139,5 = 139,5$$

### Aufgabe 7

$$20 \cdot \left( \frac{1}{2}x + 3 \right) + \frac{6 - 80x}{4} = 26,5 - \frac{10x + 80}{2}$$

$$10x + 60 + \frac{3 - 40x}{2} = 26,5 - \frac{10x + 80}{2} \mid *2$$

$$20x + 120 + 3 - 40x = 53 - 10x - 80$$

$$-20x + 123 = -27 - 10x \mid +20x$$

$$123 = -53,5 + 10x \mid +27$$

$$150 = 10x \mid : 10$$

$$x = 15$$

P:

$$210 - 298,5 = 26,5 - 115$$

$$-88,5 = -88,5$$

### Aufgabe 11

$$2,5(x - 9) - 1,25 \cdot 3,2x - (18,7 + 12x) = 1,9(x + 0,4) - 4(4,8x - 0,91)$$

$$2,5x - 22,5 - 4x - 18,7 - 12x = 1,9x + 0,76 - 19,2x + 3,64$$

$$-13,5x - 41,2 = -17,3x + 4,4 \mid +17,3x$$

$$3,8x - 41,2 = 4,4 \mid +41,2$$

$$3,8x = 45,6 \mid : 3,8$$

$$x = 12$$

P:

$$2,5(12 - 9) - 1,25 \cdot 3,2 \cdot 12 - (18,7 + 12 \cdot 12) = 1,9(12 + 0,4) - 4(4,8 \cdot 12 - 0,91)$$

$$7,5 - 48 - 162,7 = 23,56 - 226,76$$

$$-203,2 = -203,2$$