

$$\frac{1}{-} \quad 2 \cdot (1 + 2 + 3 + \dots + n) - 1 =$$

$$2 \cdot \frac{n}{2} \cdot (n+1) - 1 =$$

$$\frac{n(n+1) - 1}{-}$$

①

$$\Rightarrow 194 \cdot (194+1) - 1 = \underline{\underline{37'829 \ 1}}$$

$$\frac{2}{-} \quad 2 \cdot \frac{n}{2} \cdot (n+1) - 1 =$$

$$\frac{n(n+1) - 1}{-}$$

①

$$\Rightarrow 87 \cdot (87+1) - 1 = \underline{\underline{7'655 \ 1}}$$

$$\frac{①}{-} \quad 3 \quad 4 \cdot (n+3) - 4 = 4n + 12 - 4 = \underline{\underline{4n + 8 \ 1}}$$

$$(n+3)^2 - (n+1)^2$$

$$\frac{①}{-} \quad 4 \quad (738 + 2) \cdot \frac{369}{2} = \underline{\underline{136'530 \ 1}}$$

$$\frac{5}{-} \quad a.) \quad 2x(3x-4) = 3x^2 - 3(4-x^2)$$

$$6x^2 - 8x = 3x^2 - 12 + 3x^2$$

$$\cancel{6x^2} - 8x = \cancel{6x^2} - 12 \quad | +8x$$

$$0 = 8x - 12 \quad | +12$$

$$12 = 8x \quad | :8$$

$$\underline{\underline{1,5 = x \ 1}}$$

b.) $(4x-3)(4x-3) = 4x(3x+2) - 3x + 4x^2$
 $16x^2 - 24x + 9 = 12x^2 + 8x - 3x + 4x^2$
 $\cancel{16x^2} - 24x + 9 = \cancel{16x^2} + 5x$ $\quad | +24x$
 $9 = 29x$ $\quad | : 29$
 $\underline{\underline{\frac{9}{29} = x}}$ 1

6. $8(x-3) = \frac{x}{2}$
 $8x - 24 = \frac{x}{2} \quad | \cdot 2$
 $16x - 48 = x \quad | -x$
 $15x - 48 = 0 \quad | +48$
 $15x = 48 \quad | : 15$
 $\underline{\underline{x = 3,2}}$ 1
 Zahl: 3,2 $\frac{1}{2}$

7. $\frac{x(2x+1)}{2} < x(x+2) - 5$
 $\frac{2x^2+x}{2} < x^2+2x-5 \quad | \cdot 2$
 $\cancel{2x^2} + x < \cancel{2x^2} + 4x - 10 \quad | -x$
 $0 < 3x - 10 \quad | +10$
 $10 < 3x \quad | : 3$
 $\underline{\underline{\frac{10}{3} < x}}$ 1

Kleinste ganze Zahl: 4 $\frac{1}{2}$

9 Pkte