

$$\begin{cases} a_1x + b_1y = c_1 \\ a_2x + b_2y = c_2 \end{cases}$$

Z jednego z równań wyznaczamy jedną z niewiadomych i wstawiamy ją do drugiego równania otrzymując równanie z jedną niewiadomą. Rozwiązujemy je

$$\text{f)} \begin{cases} \frac{1}{2}(x+4)^2 + 3(y-1) = \frac{1}{2}(x-1)(x+1) \\ 2x - (x+2y) \cdot 3 = 4 \end{cases}$$

$$\text{m)} \begin{cases} \frac{x-2y}{2} - 3(x+1) = 2x+y-1 \\ 4(x-2y) - x(x+1) = 17 - (x+3)^2 \end{cases}$$

$$\text{n)} \begin{cases} \frac{x+2y}{2} + \frac{4-x-y}{3} = 2 \\ (x+3)^2 - (y-2)^2 = (x-y)(x+y) - 6 \end{cases}$$

$$\text{o)} \begin{cases} (y+1)^2 - (3+y)(y-3) = (x-2)^2 - x^2 + 8 \\ 3y - x + 4 = 0 \end{cases}$$

$$\text{p)} \begin{cases} (x-1)^2 - (y-3)^2 = (x-y)(x+y) \\ (x-2)^2 - 2(x-2y) = 1 - (3-x)(x+3) \end{cases}$$

$$\text{q)} \begin{cases} \frac{(x-y)^2 + (x+y)^2}{4} = \frac{3x^2 + 3y^2}{6} \\ (x-y)(x+y) = (x+y)^2 - 2xy - 2y^2 \end{cases}$$

$$\text{r)} \begin{cases} (x+y)^2 = 2x + 2y + 7xy \\ (x-y)^2 = 3xy + 2x + 2y \end{cases}$$

257. Rozwiąż układy równań:

a)
$$\begin{cases} 3(x-1) = 4y+1 \\ 5(y-1) = x+1 \end{cases}$$

b)
$$\begin{cases} 2(x+y) - 3(x-y) = 4 \\ 5(x+y) - 7(x-y) = 2 \end{cases}$$

c)
$$\begin{cases} \frac{2x}{9} + \frac{1}{4}y = 11 \\ \frac{5}{12}x + \frac{y}{3} = 19 \end{cases}$$

d)
$$\begin{cases} \frac{x+3}{2} - \frac{y-2}{3} = 2 \\ \frac{x-1}{4} + \frac{y+1}{3} = 4 \end{cases}$$

e)
$$\begin{cases} \frac{c+d}{3} + \frac{d}{5} = -2 \\ \frac{2c-d}{3} - \frac{3}{4}c = \frac{5}{2} \end{cases}$$

f)
$$\begin{cases} \frac{2x-y+3}{3} - \frac{x-2y+3}{4} = 4 \\ \frac{3x-4y+3}{4} + \frac{4x-2y-9}{3} = 4 \end{cases}$$

g)
$$\begin{cases} \frac{3x-2y}{5} + \frac{5x-3y}{3} = x+1 \\ \frac{2x-3y}{3} + \frac{4x-3y}{2} = y+1 \end{cases}$$

h)
$$\begin{cases} 1 - 0,3(y-2) = \frac{x+1}{5} \\ \frac{y-3}{4} = \frac{4x+9}{20} - 1,5 \end{cases}$$

i)
$$\begin{cases} 2x-3y-1 = \frac{x-5y}{2} - \frac{1}{2} \\ 1\frac{3}{4}y - \frac{1}{4}x = \frac{3y}{2} + \frac{1}{4} \end{cases}$$

j)
$$\begin{cases} x-2y+5 = 4 \\ \frac{2x-4y}{2} + 1 = \sqrt{7} \end{cases}$$

k)
$$\begin{cases} \frac{x+3y}{3} = \frac{y+3x}{6} \\ \pi - \frac{1}{6}x = \frac{\sqrt{10}-10y}{12} \end{cases}$$

l)
$$\begin{cases} x-y\sqrt{3} = 1+\sqrt{5} \\ 2y+x\sqrt{2} = \sqrt{6}-3 \end{cases}$$

7 mi / 1 wk.

260.* Znajdź rozwiązania poniższych układów równań:

a)
$$\begin{cases} y = |x| + 3 \\ x + y = 4 \end{cases}$$

b)
$$\begin{cases} |x+y| = 3 \\ x-y = 2 \end{cases}$$

c)
$$\begin{cases} |x-y| = 5 \\ x-y = 5 \end{cases}$$

d)
$$\begin{cases} |x-1| + |x+y| + 1996 = 0 \\ |x-y-z| - |y| = 1996 \end{cases}$$

e)
$$\begin{cases} |x-3| + |x-y| = 0 \\ |x-y-z| - |y| = 0 \end{cases}$$

f)
$$\begin{cases} \frac{1}{x} + \frac{1}{y} = 5 \\ \frac{3}{x} - \frac{5}{y} = -9 \end{cases}$$

g)
$$\begin{cases} |x-1| + |y-5| = 1 \\ x-y = -5 \end{cases}$$

h)
$$\begin{cases} x^2 - 1 = y^2 \\ x - y = 1 \end{cases}$$

i)
$$\begin{cases} \frac{x}{x+2y+2} = \frac{x+3}{x+2y-1} \\ x - (2x-y) = -3 \end{cases}$$

$$\left\{ \begin{array}{l} \frac{1}{2}(x+4)^2 + 3(y-1) = \frac{1}{2}(x-1)(x+1) \\ 2x - (x+2y) \cdot 3 = 4 \end{array} \right.$$

$$\left\{ \begin{array}{l} \frac{1}{2}(x^2 + 8x + 16) + 3y - 3 = \frac{1}{2}(x^2 - 1) \\ 2x - 3x - 6y = 4 \end{array} \right.$$

$$\left\{ \begin{array}{l} 4x + 8 + 3y - 3 = -\frac{1}{2} \\ -x - 6y = 4 \quad | \cdot (-1) \end{array} \right.$$

$$\left\{ \begin{array}{l} 4x + 3y = -5\frac{1}{2} \\ x + 6y = -4 \end{array} \right.$$

$$\left\{ \begin{array}{l} x = -4 - 6y \\ 4(-4 - 6y) + 3y = -5\frac{1}{2} \end{array} \right.$$

$$\begin{aligned} -16 - 24y + 3y &= -5\frac{1}{2} \\ -21y &= 10,5 \\ y &= -\frac{10,5}{21} = -\frac{1}{2} \end{aligned}$$

$$\left\{ \begin{array}{l} y = -\frac{1}{2} \\ x = -4 - 6(-\frac{1}{2}) = -4 + 3 = -1 \end{array} \right.$$

SRK

1)
$$\left\{ \begin{array}{l} \frac{1}{2}(x+4)^2 + 3(y-1) = \frac{1}{2}(x-1)(x+1) \\ 2x - (x+2y) \cdot 3 = 4 \end{array} \right.$$

$$\frac{1}{2}(-1+4)^2 + 3(-\frac{1}{2}-1) = \frac{1}{2}(-1-1)(-1+1)$$

$$\frac{1}{2} \cdot 9 - 4,5 = 0 \quad 0=0$$

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

$$-2 - (-2) \cdot 3 = 4$$

$$-2 + 6 = 4$$

$$4=4$$

$$\begin{cases} -a_1x + b_1y = c_1 \\ a_2x + b_2y = c_2 \end{cases}$$

$$b_1y + b_2y = c_1 + c_2$$
$$y(b_1 + b_2) = c_1 + c_2 \quad | : (b_1 + b_2) \neq 0$$
$$y = \dots$$

$$\text{n)} \begin{cases} \text{I} \left\{ \frac{x+2y}{2} + \frac{4-x-y}{3} = 2 \quad | \cdot 6 \right. \\ \text{II} \left\{ (x+3)^2 - (y-2)^2 = (x-y)(x+y) - 6 \right. \end{cases}$$

$$\text{I} \quad 3(x+2y) + 2(4-x-y) = 12$$

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

$$\text{II} \quad \cancel{x} + 6x + 9 - (\cancel{y}^5 - 4y + 4) = \cancel{x} - 5 - 6$$

$$\boxed{\begin{cases} x = -3 \\ y = 1\frac{3}{4} \end{cases}}$$

$$\begin{cases} x + 4y = 4 \\ 6x + 4y = -11 \end{cases}$$

$$-5x = 4 - (-11)$$

$$-5x = 15 \quad | : -5$$

$$x = -3$$

$$-3 + 4y = 4$$

$$4y = 7$$

$$y = \frac{7}{4}$$