$$3(2x-5)+4x=8x-6(3-5x)$$

$$6x-15+4x=8x-18+30x$$

$$6x+4x-8x-30x=-18+15$$

$$-28x=-3$$

$$x=\frac{-3}{-28}=0.107$$

$(x-11)(x+3) = x^2+3x-11x-33 = x^2-8x-33$

$1x^2-8x-33=0$ (a → 1, b → −8, c → −33)

$a=1 \quad b=-8 \quad c=-33$

$x = \frac{8 \pm \sqrt{(-8)^2-4\cdot 1\cdot(-33)}}{2\cdot 1} = \frac{8 \pm \sqrt{64+132}}{2} = \frac{8 \pm \sqrt{196}}{2} = \frac{8 \pm 14}{2}$

$x = \begin{cases} \frac{8+14}{2} = \frac{22}{2} = 11 \\ \frac{8-14}{2} = \frac{-6}{2} = -3 \end{cases}$

$ax^2+bx+c=0$

$x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$

$$(x-15)(x+4) = x^2+4x-15x-60 = x^2-11x-60$$

$$x^2-11x-60=0 \qquad a=1 \;/\; b=-11 \;/\; c=-60$$

$$x = \frac{11 \pm \sqrt{(-11)^2-4\cdot 1\cdot(-60)}}{2\cdot 1} = \frac{11 \pm \sqrt{121+240}}{2} = \frac{11 \pm \sqrt{361}}{2} = \frac{11 \pm 19}{2}$$

$$x = \begin{cases} \frac{11+19}{2} = \frac{30}{2} = 15 \\ \frac{11-19}{2} = \frac{-8}{2} = -4 \end{cases}$$

$$18x^2 - 3(2x - 60) = 12x^2 + 360$$

$$18x^2 - 6x + 180 = 12x^2 + 360$$

$$18x^2 - 12x^2 - 6x + 180 - 360 = 0$$

$$6x^2 - 6x - 180 = 0 \qquad a = 6 \;/\; b = -6 \;/\; c = -180$$

$$x = \frac{6 \pm \sqrt{(-6)^2 - 4 \cdot 6 \cdot (-180)}}{2 \cdot 6} = \frac{6 \pm \sqrt{36 + 4320}}{12} = \frac{6 \pm \sqrt{4356}}{12}$$

$$x = \frac{6 \pm 66}{12} = \begin{cases} \frac{6 + 66}{12} = \frac{72}{12} = 6 \\ \frac{6 - 66}{12} = \frac{-60}{12} = -5 \end{cases}$$

$4x^2 - 16 = 0 \quad a = 4 \quad b = 0 \quad c = -16$

$$x = \frac{-0 \pm \sqrt{0^2 - 4 \cdot 4 \cdot (-16)}}{2 \cdot 4} = \frac{0 \pm \sqrt{0 + 256}}{8} = \frac{\pm\sqrt{256}}{8} = \frac{\pm 16}{8}$$

$$x = \begin{cases} \frac{16}{8} = 2 \\ \frac{-16}{8} = -2 \end{cases}$$

$4x^2 - 16 = 0$

$4x^2 = 16$

$x^2 = \frac{16}{4}$

$x^2 = 4$

$x = \pm\sqrt{4} = \begin{cases} 2 \\ -2 \end{cases}$

$8x^2+2x=0$ $\quad a=8 \;/\; b=2 \;/\; c=0$

$$x=\frac{-2\pm\sqrt{2^2-4\cdot 8\cdot 0}}{2\cdot 8}=\frac{-2\pm\sqrt{4-0}}{16}=\frac{-2\pm\sqrt{4}}{16}=\frac{-2\pm 2}{16}$$

$$x=\begin{cases}\frac{-2+2}{16}=\frac{0}{16}=0\\ \frac{-2-2}{16}=\frac{-4}{16}=-0{,}25\end{cases}$$

$8x^2+2x=0$

$(8x+2)\cdot x=0$

$$\begin{cases}8x+2=0 \Rightarrow 8x=-2 \Rightarrow \boxed{x=\frac{-2}{8}=-0.25}\\ \boxed{x=0}\end{cases}$$

$$\begin{cases} 10x + 20y = 50 \\ -4x + 10y = -30 \end{cases}$$

$10x = 50 - 20y$

$$x = \frac{50 - 20y}{10} = 5 - 2y$$

$-4(5 - 2y) + 10y = -30$

$-20 + 8y + 10y = -30$

$8y + 10y = -30 + 20$

$18y = -10$

$$y = \frac{-10}{18} = -0.5$$

$x = 5 - 2 \cdot (-0.5)$

$x = 6$

$$\begin{cases} 10x + 20y = 50 \\ 4x + 10y = -30 \end{cases} \quad \begin{cases} 10x + 20y = 50 \\ -8x + 20y = -60 \end{cases}$$

$$18x = 110$$

$$\boxed{x = \frac{110}{18} = 6.\overline{1}}$$

$$10 \cdot 6.\overline{1} + 20y = 50$$

$$61.\overline{1} + 20y = 50$$

$$\boxed{y = \frac{50 - 61.\overline{1}}{20} = -0.5}$$

$$\begin{cases} -4x + 12y = 8 \\ 6x - 8y = 20 \end{cases}$$

$$-4x = 8 - 12y$$

$$x = \frac{8-12y}{-4} = -2 + 3y$$

$$6(-2+3y) - 8y = 20$$

$$-12 + 18y - 8y = 20$$

$$18y - 8y = 20 + 12$$

$$10y = 32$$

$$\boxed{y = \frac{32}{10} = 3{,}2}$$

$$x = -2 + 3 \cdot 3{,}2$$

$$x = -2 + 9{,}6$$

$$\boxed{x = 7{,}6}$$

$$\begin{cases} -4x + 12y = 8 \\ 6x - 8y = 20 \end{cases} \quad \begin{cases} -24x + 72y = 48 \\ 24x - 32y = 80 \end{cases}$$

$$40y = 128 \Rightarrow \boxed{y = \frac{128}{40} = 3.2}$$

$$-24x + 72y + 24x - 32y = 48 + 80$$

$$40y = 128$$

$$-4x + 12 \cdot 3.2 = 8$$

$$-4x + 38.4 = 8$$

$$-4x = 8 - 38.4$$

$$-4x = -30.4$$

$$\boxed{x = \frac{-30.4}{-4} = 7.6}$$

$$\begin{cases} 2x+3y=4 \\ 6x+5y=7 \end{cases}$$

$2x = 4-3y$

$x = \frac{4-3y}{2} = 2-1.5y$

$6(2-1.5y)+5y=7$

$12-9y+5y=7$

$-9y+5y=7-12$

$-4y=-5$

$y = \frac{-5}{-4} = 1.25$

$x = 2-1.5\cdot 1.25$

$\boxed{x=0.125}$

$$\begin{cases} 2x+3y=4 \\ 6x+5y=7 \end{cases} \quad \begin{cases} 6x+9y=12 \\ 6x+5y=7 \end{cases}$$

$$4y=5 \Rightarrow \boxed{y=\frac{5}{4}=1.25}$$

$$2x+3\cdot 1.25=4$$

$$2x+3.75=4$$

$$2x=4-3.75$$

$$2x=0.25$$

$$\boxed{x=\frac{0.25}{2}=0.125}$$