1. Solve for real numbers.

1) $\begin{cases} 4x + 3y = 6, \\ 2x + y = 4; \end{cases}$

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

3) $\begin{cases} x + 15y = 53, \\ 3x + y = 27; \end{cases}$

4) $\begin{cases} 3x - 5y = 14, \\ 6x - 10y = 17; \end{cases}$

5) $\begin{cases} x + 4y = 37, \\ 2x + 5y = 53; \end{cases}$

6) $\begin{cases} 7x + 3y = 100, \\ 14x + 6y = 200; \end{cases}$

7) $\begin{cases} 3x - 5y = 11, \\ 6x - 10y = 22; \end{cases}$

8) $\begin{cases} y = -2x + 5, \\ y = -2x - 7; \end{cases}$

9) $\begin{cases} x = -3y + 20, \\ x = 5y + 12; \end{cases}$

10) $\begin{cases} 5x + 5y = 3, \\ 3x - 3y = 5; \end{cases}$

11) $\begin{cases} 2x + 3y = 1, \\ 3x + 2y = 9; \end{cases}$

12) $\begin{cases} 2x - 3y = 8, \\ 3x - 2y = 27; \end{cases}$

13) $\begin{cases} 12y = 11x - 196, \\ 12x = 13y + 213; \end{cases}$

14) $\begin{cases} 2x - 3y - 4 = 0, \\ 3x - y - 17 = 0; \end{cases}$

15) $\begin{cases} x + y = 3{,}5, \\ 3x + 8y = 22; \end{cases}$

16) $\begin{cases} 2(x+y) - 5(y-x) = 17, \\ 3(x+2y) + 7(3x+5y) = 7; \end{cases}$

[ **1)** $[3;-2]$; **2)** $\left[\frac{1}{2};-2\right]$; **3)** $[8;3]$; **4)** has no solution **5)** $[9;7]$; the system has infinitely many solutions **7)** has infinitely many solutions **8)** no solution **9)** $[17;1]$; **10)** $\left[\frac{17}{15};-\frac{8}{15}\right]$; **11)** $[5;-3]$; **12)** $[13;0]$ **13)** $[8;-9]$; **14)** $\left[\frac{47}{7};\frac{22}{7}\right]$; **15)** $[1,2;2,3]$; **16)** $[2;-1]$;

2. Solve for real numbers.

1) $\begin{cases} y = -\dfrac{1}{3}x + 2, \\ \dfrac{y}{2} + \dfrac{x}{6} = 1; \end{cases}$

2) $\begin{cases} \dfrac{x+y}{5} + \dfrac{y}{5} = -2, \\ \dfrac{2x-y}{3} - \dfrac{3x}{4} = \dfrac{3}{2}; \end{cases}$

3) $\begin{cases} \dfrac{2x+1}{5} - \dfrac{3y+2}{7} = 2y - x, \\ \dfrac{3x-1}{4} + \dfrac{7y+2}{6} = 2x - y; \end{cases}$

4) $\begin{cases} \dfrac{x+1}{3} - \dfrac{y+2}{4} = \dfrac{2(x-y)}{5}, \\ \dfrac{x-3}{4} - \dfrac{y-3}{3} = 2y - x; \end{cases}$

5) $\begin{cases} \dfrac{3x-2y}{5} + \dfrac{5x-3y}{3} = x + 1, \\ \dfrac{2x-3y}{3} + \dfrac{4x-3y}{3} = y; \end{cases}$

6) $\begin{cases} \dfrac{2x-y+3}{3} - \dfrac{x-2y+3}{4} = 4, \\ \dfrac{3x-4y+3}{4} + \dfrac{4x-2y-9}{3} = 4; \end{cases}$

[ **1)** the system has infinitely many solutions **2)** $[-2;-4]$; **3)** $[7;4]$; **4)** $[11;6]$; **5)** $[3;2]$; **6)** $[7;5]$; **7)** $[\sqrt{2};3]$. ]

3. Solve for real numbers.

1) $\begin{cases} \dfrac{4}{x-3y} = \dfrac{7}{9x+2y}, \\ \dfrac{3}{2x+y} = \dfrac{9}{x-y+1}; \end{cases}$

2) $\begin{cases} \dfrac{2}{x-2y} = \dfrac{3}{2x-y}, \\ \dfrac{4x-2y}{3(x-2y)} = 1; \end{cases}$

3) $\begin{cases} \dfrac{2x-5}{x-4} - \dfrac{y+1}{y-2} = 1, \\ \dfrac{3x+1}{x-1} - \dfrac{2y+9}{y+2} = 1; \end{cases}$

4) $\begin{cases} (3x-4):(3y+4) = 1:2, \\ (2x-y):(2x+y) = 1:4; \end{cases}$

5) $\begin{cases} (x+y):(x+3) = 3:11, \\ (x-y):(y+4) = 1:13. \end{cases}$

[ **1)** $[1;-1]$; **2)** the system has infinitely many solutions, $x \ne 2y$, $x \ne \frac{1}{2}y$; **3)** $[5;3]$; **4)** $[5;6]$; **5)** $\left[\frac{2}{3};\frac{1}{3}\right]$. ]