

حل سوالات زیر را با استفاده از روش حذف غیریابی و روش حذف ضرایب را استفاده کنید - 91 - صفحه 1

$$\begin{cases} 2x + y \\ 2 \\ x - y \end{cases} = 14 = 2^7 \quad \text{①}$$

$$\rightarrow \begin{cases} 2x + y = 14 \\ x - y = 0 \end{cases} \rightarrow \begin{array}{l} \text{جمع کنیم} \\ \hline 3x = 14 \\ x = \frac{14}{3} \end{array}$$

$$x - y = 0 \rightarrow x = y = \frac{14}{3}$$

$$\begin{cases} \frac{4}{x} + \frac{a}{y} = 7 \\ \frac{14}{x} - \frac{3}{y} = 2 \end{cases} \xrightarrow{\substack{-1 \\ \times 2}} \begin{cases} \frac{4}{x} + \frac{a}{y} = 7 \\ \frac{28}{x} - \frac{6}{y} = 4 \end{cases}$$

$$\xrightarrow{\substack{\times 2 \\ \times 1}} \begin{cases} 8a + 2b = 14 \\ 14a - 6b = 4 \end{cases} \xrightarrow{\substack{\times 1 \\ \times 1}} \begin{cases} 8a + 2b = 14 \\ 14a - 6b = 4 \end{cases} \text{ ②}$$

$$\wedge \wedge a = 22 \rightarrow a = \frac{1}{2} \Rightarrow \boxed{x = 7}$$

$$4a + ab = 7$$

$$4 \times \frac{1}{2} + ab = 7 \rightarrow ab = 7 - \frac{4}{2} = \frac{10}{2}$$

$$ab = \frac{10}{2} \rightarrow b = \frac{1}{2} \rightarrow \boxed{y = 2}$$

$$\begin{cases} \frac{x+y}{xy} = 2 \\ \frac{x-y}{xy} = 1 \end{cases} \rightarrow \begin{cases} x+y = 2xy \\ x-y = xy \end{cases} \text{ ③}$$

$$\frac{x+y}{x-y} = \frac{2xy}{xy} = 2$$

$$x+y = 2(x-y) \Rightarrow x+y = 2x-2y \Rightarrow x = 3y$$

$$\frac{x}{y} = 3 \Rightarrow \boxed{x = 3y}$$

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

$$\rightarrow \begin{cases} 2y - 2 = x + 1 \\ y - 1 = -x + 1 \end{cases}$$

$$\hline y - 1 = 1 \rightarrow \boxed{y = 2}$$

$$y + 1 = x - 1$$

$$2 + 1 = x - 1$$

$$\boxed{x = 2}$$

$$\begin{cases} 2x + 3y = 2a + 14 \\ ax - ay = 2a - 10 \end{cases} \text{ ⑤}$$

$$\rightarrow \begin{cases} 10x + 15y = 10a + 14a \\ -10x + 10y = -10a + 10 \end{cases}$$

$$\hline 25y = 24a \rightarrow y = \frac{24a}{25}$$

$$\begin{cases} 2x = 2a + 14 - 4 \\ 2x = 2a + 10 \\ \boxed{x = a + 5} \end{cases}$$

$$\begin{cases} \frac{a}{x-y} + \sqrt{ay-1} = 11 \\ \sqrt{xy-1} + \frac{a}{y-x} = 11 \end{cases}$$

$$\frac{1}{x-y} = b$$

$$\sqrt{ay-1} = a$$

$$\sqrt{xy-1} = \sqrt{r(ay-1)} = r\sqrt{ay-1} = ra$$

$$\begin{cases} \cancel{ay} + a = 11 \\ ra - \cancel{ay} = 11 \end{cases}$$

$$\frac{a}{y-x} = \frac{-a}{x-y} = -ab$$

$$ra = 11 \rightarrow a = 11$$

$$\sqrt{ay-1} = 11 \rightarrow ay-1 = 121 : ay = 122$$

$$ab + 11 = 11 \rightarrow b = 1$$

$$\frac{1}{x-y} = 1 \rightarrow x-y = 1 \rightarrow x = y+1$$

$$y-x = y - (y+1) = -1$$

چون توان ها زوج است، حاصل هر دو برابر نامنفی است و چون حاصل جمع برابر با صفر است، پس هر دو برابر صفر است:

$$\begin{cases} a - \sqrt{11} = 0 \rightarrow a = \sqrt{11} \\ a + b = 0 \rightarrow -a = +b = -\sqrt{11} \end{cases}$$

$$\begin{cases} x - \frac{1}{x} = -1 \\ y - \frac{1}{y} = 1 \end{cases} \quad \begin{matrix} x-1 \\ y-1 \end{matrix} \left\{ \begin{matrix} x^r - 1 = -x \\ y^r - 1 = y \end{matrix} \right.$$

$$\begin{cases} -x^r + 1 = +x \\ y^r - 1 = y \end{cases}$$

$$y^r - x^r = y + x$$

$$(y-x)(y+x) = (y+x)x$$

$$y-x = 1$$

$$\begin{cases} r^x = a \\ r^y = 11a \end{cases} \rightarrow \begin{cases} r^x = a \\ r^y = a^{11} = (r^x)^{11} = r^{11x} \Rightarrow y = 11x \end{cases}$$

$$\frac{x+y}{x-y} = \frac{x+11x}{x-11x} = \frac{12x}{-10x} = -\frac{6}{5}$$

$$\frac{x+y}{x-y} = -\frac{6}{5}$$