

Exercise 1 $k=4$ $c=2003$

$$a=53$$

$$b=49$$

$$1. \quad h, \quad h^2 \leq 4 < (h+1)^2$$

$$h=2, \quad 2^2 \leq 4 < 3^2$$

Ответ: 2

$$2. \quad 2003 - \text{простое число}$$

$$2003 \cdot 1$$

$$3. \quad 53x + 49y = 2003$$

i

$$q \quad 53 \quad 49 \quad 4 \quad 1$$

$$r \quad \quad 1 \quad 12$$

$$x \quad 1 \quad 0 \quad 1 \quad -12$$

$$y \quad 0 \quad 1 \quad -1 \quad 13$$

$$x = -12 \cdot 2003 + 49k$$

$$y = 13 \cdot 2003 - 53k, \quad k \in \mathbb{Z}$$

$$\text{Ответ: } x = -24036 + 49k$$

$$y = 26039 - 53k, \quad k \in \mathbb{Z}$$

$$4.1 \quad 3x + 344 = 1133$$

/5 разн с.с)

$$1) \quad 3x = 234$$

$$x = 234/3$$

$$x = 43_{10}$$

$$\begin{array}{r} 1133 \\ - 344 \\ \hline 234 \end{array}$$

$$\begin{array}{r} 234 \overline{) 3} \\ 22 \quad 43 \\ \hline 14 \\ - 14 \\ \hline 0 \end{array}$$

$$2) \quad \cancel{3x + 344 = 1133}$$

$$\begin{array}{r} 344 \overline{) 5} \\ 30 \quad 168 \overline{) 5} \\ \hline 44 \quad 5 \quad 13 \overline{) 5} \\ \hline 40 \quad 13 \quad 10 \overline{) 2} \\ \hline 4 \quad 15 \quad 3 \end{array}$$

$$2) \quad 3x + 344 = 1133$$

$$344_5 = 75 + 20 + 4 = 99$$

$$1133 = 125 + 25 + 15 + 3 =$$

$$= 168$$

$$3x + 99 = 168$$

$$3x = 69$$

$$x = 23$$

$$\text{Ответ: } \cancel{43_{10}} \quad 43_5 = 23_{10}$$

$$\begin{array}{r} 1133 \overline{) 5} \\ 10 \quad 226 \overline{) 5} \\ \hline 73 \quad 20 \quad 45 \overline{) 5} \\ \hline 10 \quad 26 \quad 45 \overline{) 9} \\ \hline 33 \quad 25 \quad 0 \\ \hline 30 \quad 1 \end{array}$$

$$\cancel{3x + 2334}$$