第26回 答え

Ⅱ。 (1) $72 = 2^3 \cdot 3^2 = 2^3 \cdot 3^2 \cdot 5^0$

$15 = 3 \cdot 5 = 2^0 \cdot 3^1 \cdot 5^1$

308 = 154 · 2

154 = 77 · 2

∴ 3 //

(2) $308 = 2^2 \cdot 7 \cdot 11 = 2^2 \cdot 3^0 \cdot 5^0 \cdot 7^1 \cdot 11^1$

105 = 5 · 21

$105 = 3 \cdot 5\ 7 = 2^0 \cdot 3^1 \cdot 5^1 \cdot 7^1 \cdot 11^0$

∴ 7 //

(3) $2717 = 1309 \times 2 + 99$

2618

$1309 = 99 \times 13 + 22$

1300 − 13

= 1287

$99 = 3^2 \cdot 11$

$22 = 2 \cdot 11$

∴ 11 //

2. (1) $36 = 25 \times 1 + 11$

$25 = 11 \times 2 + 3$

$11 = 3 \times 3 + 2$

$3 = 2 \times 1 + 1$,

$3 + 2 \times (-1) = 1$

$11 + 3 \times (-3) = 2$

$25 + 11 \times (-2) = 3$

$36 + 25 \times (-1) = 11$,

$3 + \{11 + 3 \times (-3)\} \times (-1) = 1$

$3 \cdot 4 + 11 \times (-1) = 1$

$\{25 + 11 \times (-2)\} \cdot 4 + 11(-1) = 1$

$25 \cdot 4 + 11(-9) = 1$

$25 \cdot 4 + \{36 + 25 \times (-1)\} \times (-9) = 1$

$36 \times (-9) + 25 \times 13 = 1$

$(x, y) = (-9, 13)$

25×13

$= 250 + 75$

$= 325$

36×9

$= 270 + 54$

$= 324$

R。 (2) $27 - 26 = 1$

$9 \cdot 3 - 13 \cdot 2 = 1$

$9 \cdot 21 - 13 \cdot 14 = 7$

$\therefore (x, y) = (21, 14)$ //

(3) $7(-1) + 8(1) = 1$

$7(-3) + 8(3) = 3$

$\therefore (x, y) = (-3, 3)$ //

B。 (7) $7x + 8y = 1$

$-) \underline{7(-1) + 8 \cdot 1 = 1}$

$7(x+1) + 8(y-1) = 0$

$$\begin{cases} x = -8k - 1 \\ y = 7k + 1 \end{cases} \quad (k \in \mathbb{Z})$$

//

B. (2) $3x - 5y = 4$

$$-\left| \begin{array}{r} 3(-2) - 5(-2) = 4 \\ \hline 3(x+2) - 5(y+2) = 0 \end{array} \right.$$

$$\begin{cases} x = 5k - 2 \\ y = 3k - 2 \end{cases} \quad (k \in \mathbb{Z}) \quad //$$

4. $2 + 4 \cdot 5 + 1 \times 25 + 3 \times 125$

$= 2 + 20 + 25 + 375$

$= 422$ //

5. $248 = 243 + 5$

$= 3^5 + 3 + 2$

$= 100012_{(3)}$ //

3
9
27
81
243