

Question based on Number system

Q1 → find the value x, y, z

$$\rightarrow (27)_3 + (61)_7 + (14)_7 = (xyz)_5$$

$$\rightarrow (21)_3 \rightarrow 2 \times 3^1 + 1 \times 3^0 = 6 + 1 = 7_{10}$$

$$(14)_7 \rightarrow 1 \times 7^1 + 4 \times 7^0 = 7 + 4 = 11_{10}$$

$$(61)_{10} \rightarrow \text{base } 5$$

$$\begin{array}{r} 5 \overline{) 61} \\ 5 \quad 12 \quad 1 \\ 5 \quad 2 \quad 2 \\ 0 \quad 2 \end{array}$$

$$\downarrow (8)_{10} \rightarrow 8 + 10 = 18$$

$$(61)_7 \rightarrow 6 \times 7^1 + 1 \times 7^0 = 42 + 1 = 43_{10}$$

$$(7)_{10} \rightarrow (12)_5 \quad (11)_{10} \rightarrow (21)_5$$

$$(43)_{10} \rightarrow (133)_5$$

$$\begin{array}{r} + 1 \\ 12 \\ \hline 133 \\ + 21 \\ \hline (221)_5 \end{array}$$

$$\begin{array}{r} 6 \times 5 \\ 7 \times 5 \\ 2 \end{array}$$

Find the n

$$(143)_6 \rightarrow (n7)_8$$

$$\rightarrow \begin{cases} y > 7 \\ n < 8 \end{cases}$$

$$n \rightarrow (7, 4, 2, 1)$$

$$(7, 4, 2, 1) \rightarrow$$

$$\begin{array}{r} 2 \overline{) 56} \\ 2 \quad 28 \\ 2 \quad 14 \\ 7 \quad 7 \end{array}$$

$$(77)_8$$

$$56 + 7$$

$$63$$

$$(47)_8$$

$$56 + 7$$

$$63$$

$$\rightarrow 26 + 24 + 3$$

$$\rightarrow (63)_{10} \rightarrow 6 \times 10 + 3 \times 10^0$$

$$(63) \rightarrow ny + 7$$

$$(56) \rightarrow ny$$

$$\begin{array}{l} n \times y \rightarrow 56 \\ \leftarrow 7 \times 8 \rightarrow 56 \\ \rightarrow 4 \times 14 \rightarrow 56 \\ \rightarrow 2 \times 28 \rightarrow 56 \\ \rightarrow 1 \times 56 \rightarrow 56 \end{array}$$

$$\underline{Q} \quad (124)_n = (3n2)_4$$

$$\begin{cases} n > 4 \\ n < 4 \end{cases}$$

Find n

None of these

Q

Find out Base

$$10n1$$

$$\leftarrow 10^k, 1$$

Q

find

$$\Rightarrow (64)_6 + (19)_6 = (80)_6$$

$$\Rightarrow 6 \times 6^1 + 4 \times 6^0 + (6^1 \times 1 + 9 \times 6^0) = 6^1 \times 8 + 0 \times 6^0$$

$$\Rightarrow 66 + 4 + 6 + 9 = 86 + 0$$

$$\Rightarrow \boxed{13 \text{ } 6} \text{ Ans}$$

10's
11's

$$\begin{array}{r} 54 \\ 24 \\ \hline 78 \end{array} \quad \begin{array}{r} 1 \\ 45 \\ 95 \\ \hline 03 \end{array} \quad \begin{array}{r} 1 \\ 48 \\ 91 \\ \hline 1 \end{array}$$

(base 10)

Q $(-5 \rightarrow 3)$ Number System Convert $(120)_{10} \rightarrow$

$(A, B, C, D, E, F, 1, 2, 3)$
 $-5 \quad -4 \quad -3 \quad -2 \quad -1 \quad 0 \quad 1 \quad 2 \quad 3$

$$\begin{array}{r|l} 9 & 120 \\ 9 & 13 \rightarrow 3 \\ 9 & 2 \rightarrow -5 \\ & 0 \rightarrow 2 \end{array}$$

base 9

$$(2, -5, 3)$$

$$(2 \text{ A } 3) \text{ Ans}$$

$$\begin{array}{r} 9 \overline{) 135} 2 \\ 18 \\ \hline -5 \end{array}$$