

① $7, 8, + 3, 2 + 1$

$$\begin{array}{|c|} \hline 7 \\ \hline \end{array} \begin{array}{|c|} \hline 8 \\ \hline \end{array} + \begin{array}{|c|} \hline 3 \\ \hline \end{array} \begin{array}{|c|} \hline 2 \\ \hline \end{array} + \begin{array}{|c|} \hline 1 \\ \hline \end{array} = \boxed{13}$$

7 8 + 3 2 + 1

4. Pre-fix Expressions

① $+ - 20 * 3 4 1$

$$\begin{array}{|c|} \hline 1 \\ \hline \end{array} \begin{array}{|c|} \hline 4 \\ \hline \end{array} \begin{array}{|c|} \hline 3 \\ \hline \end{array} \begin{array}{|c|} \hline 12 \\ \hline \end{array} \begin{array}{|c|} \hline 20 \\ \hline \end{array} \begin{array}{|c|} \hline 8 \\ \hline \end{array} \begin{array}{|c|} \hline 9 \\ \hline \end{array} = \boxed{9}$$

1 4 3 * 20 - +

② $- * 3 + 3 7 1 \wedge 4 2 2$

$$\begin{array}{|c|} \hline 2 \\ \hline \end{array} \begin{array}{|c|} \hline 2 \\ \hline \end{array} \begin{array}{|c|} \hline 4 \\ \hline \end{array} \begin{array}{|c|} \hline 16 \\ \hline \end{array} \begin{array}{|c|} \hline 8 \\ \hline \end{array} \begin{array}{|c|} \hline 7 \\ \hline \end{array} \begin{array}{|c|} \hline 3 \\ \hline \end{array} \begin{array}{|c|} \hline 10 \\ \hline \end{array}$$

2 2 4 ^ 1 7 3 +

$$\begin{array}{|c|} \hline 3 \\ \hline \end{array} \begin{array}{|c|} \hline 30 \\ \hline \end{array} \begin{array}{|c|} \hline 22 \\ \hline \end{array} = \boxed{22}$$

3 * -

③ $- 1, * 3 \wedge 5 2 15 - 8 \wedge 2 2$

$$\begin{array}{|c|} \hline 2 \\ \hline 2 \\ \hline 2 \end{array} \quad \begin{array}{|c|} \hline 2 \\ \hline 2 \\ \hline 2 \end{array} \quad \begin{array}{|c|} \hline 4 \\ \hline n \\ \hline \end{array} \quad \begin{array}{|c|} \hline 9 \\ \hline 4 \\ \hline 5 \end{array} \quad \begin{array}{|c|} \hline 1 \\ \hline - \\ \hline \end{array} \quad \begin{array}{|c|} \hline 15 \\ \hline 1 \\ \hline 15 \end{array} \quad \begin{array}{|c|} \hline 2 \\ \hline 15 \\ \hline 1 \\ \hline 2 \end{array} \quad \begin{array}{|c|} \hline 5 \\ \hline 2 \\ \hline 15 \\ \hline 1 \\ \hline 5 \end{array}$$

$$\begin{array}{|c|} \hline 25 \\ \hline 15 \\ \hline 1 \\ \hline n \end{array} \quad \begin{array}{|c|} \hline 3 \\ \hline 25 \\ \hline 15 \\ \hline 1 \\ \hline 3 \end{array} \quad \begin{array}{|c|} \hline 75 \\ \hline 15 \\ \hline 1 \\ \hline * \end{array} \quad \begin{array}{|c|} \hline 5 \\ \hline 1 \\ \hline 1 \end{array} \quad \begin{array}{|c|} \hline 4 \\ \hline - \\ \hline \end{array} = \begin{array}{|c|} \hline 4 \\ \hline \end{array}$$

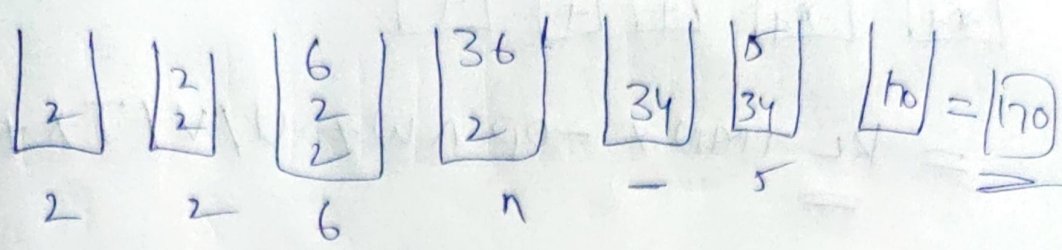
④ $+, -, +, /, *, 2, 20, 2, *, +, 3, 4, 1, 3, 2, 6, 15$

$$\begin{array}{|c|} \hline 15 \\ \hline 6 \end{array} \quad \begin{array}{|c|} \hline 6 \\ \hline 15 \end{array} \quad \begin{array}{|c|} \hline 2 \\ \hline 16 \\ \hline 15 \\ \hline 2 \end{array} \quad \begin{array}{|c|} \hline 3 \\ \hline 2 \\ \hline 16 \\ \hline 15 \\ \hline 3 \end{array} \quad \begin{array}{|c|} \hline 9 \\ \hline 16 \\ \hline 15 \\ \hline n \end{array} \quad \begin{array}{|c|} \hline 4 \\ \hline 9 \\ \hline 16 \\ \hline 15 \\ \hline 4 \end{array} \quad \begin{array}{|c|} \hline 3 \\ \hline 4 \\ \hline 9 \\ \hline 16 \\ \hline 15 \\ \hline 3 \end{array}$$

$$\begin{array}{|c|} \hline 7 \\ \hline 9 \\ \hline 16 \\ \hline 15 \\ \hline + \end{array} \quad \begin{array}{|c|} \hline 63 \\ \hline 16 \\ \hline 15 \\ \hline * \end{array} \quad \begin{array}{|c|} \hline 2 \\ \hline 63 \\ \hline 16 \\ \hline 15 \\ \hline 2 \end{array} \quad \begin{array}{|c|} \hline 20 \\ \hline 2 \\ \hline 63 \\ \hline 16 \\ \hline 15 \\ \hline 20 \end{array} \quad \begin{array}{|c|} \hline 2 \\ \hline 20 \\ \hline 2 \\ \hline 63 \\ \hline 16 \\ \hline 15 \\ \hline 2 \end{array} \quad \begin{array}{|c|} \hline 40 \\ \hline 2 \\ \hline 63 \\ \hline 16 \\ \hline 15 \\ \hline * \end{array} \quad \begin{array}{|c|} \hline 20 \\ \hline 63 \\ \hline 16 \\ \hline 15 \\ \hline 1 \end{array}$$

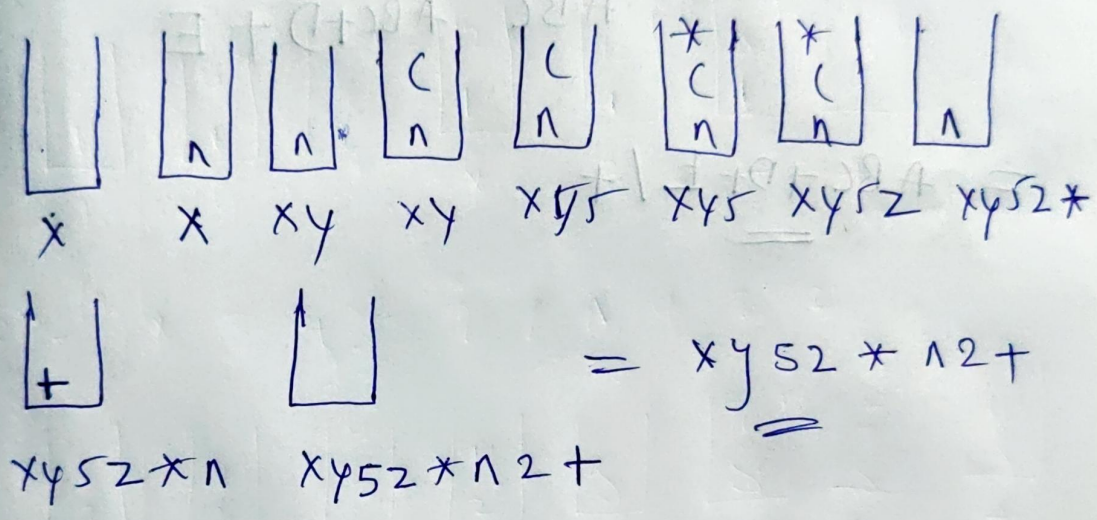
$$\begin{array}{|c|} \hline 83 \\ \hline 16 \\ \hline 15 \\ \hline + \end{array} \quad \begin{array}{|c|} \hline 67 \\ \hline 15 \\ \hline - \end{array} \quad \begin{array}{|c|} \hline 82 \\ \hline + \end{array} = \begin{array}{|c|} \hline 82 \\ \hline \end{array}$$

④ $x, 5, -, n, 6, 2, 2$

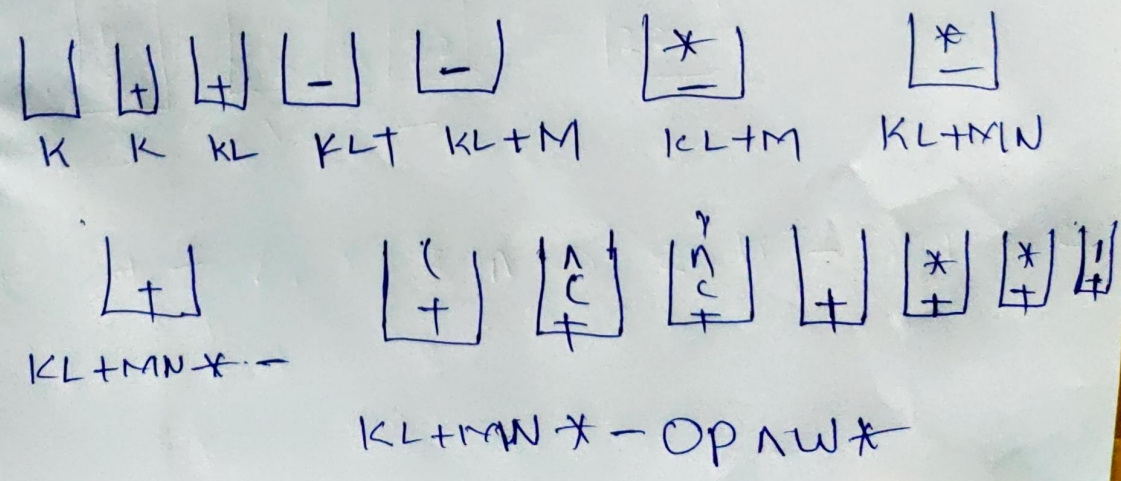


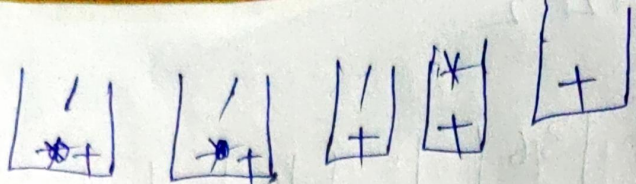
⑤ Infix to Postfix

① $x^y (5 * 2) + 2$



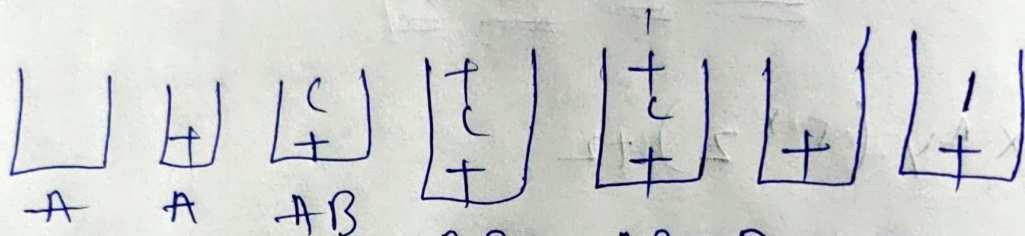
⑥ $K + L - M * N + (O \wedge P) * W / U / V * T + Q$





$$= \underline{\underline{KL + MN * - OP \wedge W * U / V / T * + Q}}$$

③ $A + (B + C + D) / E$



$ABC \quad ABC + D + E$

$$* = \underline{\underline{ABC + D + E / +}}$$

$$+ 2 \wedge * 5 2 \wedge X =$$

$$+ 5 \wedge X 5 2 \wedge X \quad \wedge X 5 2 \wedge X$$

④ $R + T - M \times N + (O \times V) \times W \mid U \mid V \times T + \phi$

