

1. Find the sum of all numbers greater than 10000 formed by the digits 1, 3, 5, 7, 9, no digits being repeated.

$$1824 = 1 \times 10^3 + 8 \times 10^2 + 2 \times 10^1 + 4$$

$$\begin{array}{r} \text{---} \text{---} \text{---} \text{---} \end{array} \quad \begin{array}{r} 1, 3, 5, 7, 9 \\ \text{---} \end{array} \quad \begin{array}{r} 10^4 \\ \text{---} \end{array} + () \times 10^3 + () \times 10^2 + () \times 10^1 + () \times 10^0$$

$$\begin{array}{r} \text{---} \text{---} \text{---} \text{---} \end{array} \quad \begin{array}{r} 1 \\ \text{---} \end{array} \quad \begin{array}{r} 10^4 \\ \text{---} \end{array}$$

$$(9 + 7 + 5 + 3 + 1) 4! \times (10^0 + 10^1 + 10^2 + 10^3 + 10^4)$$

$$1 \times 10^1 \quad 4! \quad 10^0 + () 10^1$$

66 66 66 60

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666600

1, 3, 5, 7, 9

13579+

$$(1+3+5+7+9)24$$

13579, 13597, -

Paper 2 ✓

2. Find sum of all numbers greater than 10000 formed by digits 0, 2, 4, 6, 8 without repetition.

$$----- (0+2+4+6+8) 4! (10^0 + 10^1 + 10^2 + 10^3 + 10^4) - (2+4+6+8) 3! (10^0 + 10^1 + 10^2 + 10^3)$$

0 -----

3. Find num of all distinct 4 digit numbers that contain only the digits 1, 2, 3, 4, 5 each at most once.

$$4 (1+2+3+4+5) 3! (10^0 + 10^1 + 10^2 + 10^3)$$

$$\left[(2+3+4+5) + (1+3+4+5) + (1+2+4+5) + (1+2+3+5) + (1+2+3+4) \right] 3! (10^0 + 10^1 + 10^2 + 10^3)$$

4. Find the sum of all numbers that can be formed using all the digits 2, 3, 3, 4, 4, 4.