Combination Problem

# Problem 1

Use the numbers below to form 4 digit numbers that can be divided by 2 exactly (without remainder)

**Use all the digits only once**

```
3 2 0 5
```

How many 4 digit numbers can be formed?
*(Do not start with the number zero)*

## Understand

- What type of numbers are to be formed?
- What are you asked to find?

## Hint

- Use **Math combinations** formula without repeating the same digits.

## Sample Input

```
3 2 0 5
```

## Sample Output

```
3250
3052
3520
3502
2350
2530
5320
5302
5230
5032
```

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Problem By Humayan

```
import functools

def combination(x):

    for i in range(4):

        for j in range(4):

            for k in range(4):

                for l in range(4):

                    # combination of (i, j, k, l) : ij ik il jk kl jl
                    if i != j and i !=k and i != l and j != k and k != l and j != l:

                      if x[i] != 0:

                        result = x[i], x[j], x[k], x[l]

                        # convert tuple to int using lambda function
                        numbers = functools.reduce(lambda sub, ele: sub * 10 + ele, result)

                        # divided by 2 exactly (without remainder)
                        if numbers % 2 == 0:
                            print(numbers)

combination([3, 2, 0, 5])
```

```
3250
3052
3520
3502
2350
2530
5320
5302
5230
5032
```