**Write the python program for Cript-Arithmetic problem**

**PROGRAM:**

import itertools

def solve\_cryptarithmetic():

# The words in the problem

word1 = "SEND"

word2 = "MORE"

result = "MONEY"

# All unique characters in the equation

unique\_chars = set(word1 + word2 + result)

if len(unique\_chars) > 10:

print("Too many unique letters, not solvable with digits 0-9.")

return

# Create a list for consistent ordering

unique\_chars = list(unique\_chars)

# Get all permutations of digits 0-9 with length equal to number of unique letters

for perm in itertools.permutations(range(10), len(unique\_chars)):

# Map characters to digits

char\_digit = dict(zip(unique\_chars, perm))

# First letter of any word can't be zero

if char\_digit[word1[0]] == 0 or char\_digit[word2[0]] == 0 or char\_digit[result[0]] == 0:

continue

# Convert words to numbers

num1 = int("".join(str(char\_digit[c]) for c in word1))

num2 = int("".join(str(char\_digit[c]) for c in word2))

res = int("".join(str(char\_digit[c]) for c in result))

# Check if it satisfies the equation

if num1 + num2 == res:

print("✅ Solution Found:")

print(f"{word1} = {num1}")

print(f"{word2} = {num2}")

print(f"{result} = {res}")

print(f"Mapping: {char\_digit}")

return

print("❌ No solution found.")

# Run the solver

solve\_cryptarithmetic()

