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Subject: AI

3. CONSTRAINT SATISFACTION PROBLEM

CODE:

import itertools

def getValue(word,sub):

s=0

f=1

for i in reversed(word):

s=s+f\*sub[i]

f=f\*10

return s

def compute(eqn):

l,r=eqn.lower().replace(' ','').split('=')

l=l.split('+')

letters=set(r)

for word in l:

for j in word:

letters.add(j)

letters=list(letters)

dig=range(10)

for perm in itertools.permutations(dig,len(letters)):

ans=dict(zip(letters,perm))

if(sum(getValue(word,ans) for word in l) == getValue(r,ans)):

print(" + ".join(str(getValue(word,ans)) for word in l) + " = {} (mapping: {})".format(getValue(r,ans),ans))

print("EAT + THAT = APPLE")

compute("POINT + ZERO = ENERGY")

OUTPUT:



