Problem 1

Algorithm 1 Currency Exchange

1: **function** ADD-RATE(FromCurr,ToCurr,Rate,AdjList)
2:     AdjList[FromCurr].append((ToCurr, Rate))
3:     AdjList[ToCurr].append((FromCurr, 1/Rate))
4: **end function**
5: **function** RATE-SEARCH(InCurr)
6:     **if** InCurr == OutCurr **then**
7:         **return** 1
8:     **end if**
9:     **for** (PossibleCurr, Rate) in G[InCurr] **do**
10:         **if** PossibleCurr not in visited **then**
11:             result = RATE-SEARCH(PossibleCurr)
12:             **if** result not null **then**
13:                 **return** Rate * result   ▷ Conversion found
14:             **end if**
15:         **end if**
16:     **end for**
17:     **return** null   ▷ No conversion found
18: **end function**
19: **function** FIND-CONVERSION(FromCurr,ToCurr,Rates)
20:     AdjList = {∅}
21:     **for** (curr1, curr2, rate) in Rates **do**
22:         ADD-RATE(curr1, curr2, rate,AdjList)
23:     **end for**
24:     visited = [∅]
25:     conversion = RATE-SEARCH(FromCurr)
26:     **if** conversion not null **then**
27:         **return** conversion
28:     **else**
29:         **return** "conversion not possible"
30:     **end if**
31: **end function**