

Problem 1: Recalled Hardware

Input	Output	Explanation
serialNumber = NJ812162e0p	false	It was manufactured in New Jersey in 2016 after February, so it is not faulty
serialNumber = AL51016799n	false	The unit was manufactured in Alaska in October of 2016 but UID is divisible by 9 and not by 27 so it is not faulty
serialNumber = NY11016872d	true	
serialNumber = NJ701161D43	true	
serialNumber = PA601165oo5	false	

Problem 2: Newmerals (2 points)

Input	Output	Explanation
newmeralA = AACA newmeralB = BCAD operator = :	ABACCAAD	
newmeralA = DACB newmeralB = DBCC operator = ^	ABDC	
newmeralA = CA newmeralB = DB operator = %	BDCADB	
newmeralA = CC newmeralB = DB operator = ^	DC	
newmeralA = DCCBCD newmeralB = ADDBCD operator = :	DACDCDBBCCDD	
newmeralA = DCC newmeralB = BAC operator = %	CABDCCBAC	

Problem 3: nCrypt

Input	Output	Explanation
message = Ofx Xbwf Pqcj Twdkp	2	New Wave(rote 1) Noah Rubin(rote 2)
message = pbSkrqhv duh nqrzq wr hashulhqfh vsrqwdqhrxv frpexvwlrq.	3	myPhones are known to experience spontaneous combustion.
message = Abnu'f zlCubar pbzohfgrq juvyr ur jnf ubyqvat vg. Uvf unaq vf fzhqtrq.	13	"Noah's myPhone combusted while he was holding it. His hand is smudged."
message = Em vmm1 bw lckb bixm Vwip bw bpm eitt ivl LLWA pqa amzdmz jmnwzm Vme Eidm kibkpma ca	8	"We need to duct tape Noah to the wall and DDOS his server before New Wave catches us"
Jkwd Nqxej byxwcjwnxdb lxvkdbcrxw lx0gnmd nq ctbs szod?	9	Jkwd Nqxej" = rot(Noah Rubin, 22) "byxwcjwnxdb lxvkdbcrxw" = rot("spontaneous combustion", 9) lx0gnmd nq ctbs szod? = rot("myPhone or duct tape?", 25). Rot 9 has the most characters and therefore the greatest score.

Problem 4: Vending Machine

Sample Data

Input	2d Array Representation of path	Output	Explanation
{"A1", "C9"}, {"C9", "B3"}, {"B3", "A7"}, {"A7", "D1"}, {"D1", "CheetoMojito"}, {"A2", "A3"}, {"A3", "A4"}, {"A4", "A2"}, {"C4", "Boom"}, {"E1", "E4"}, {"E4", "F5"}			D1, C9, A1 → "CheetoMojito" C4 → "Boom" E1, E4 → "Nothing" A2, A3, A4 → "Loop"
{"A1", "F9"}, {"B2", "F8"}, {"C3", "F7"}, {"C4", "F6"}, {"F6", "A1"}, {"F9", "KitKat"}, {"F7", "C3"}, {"B6", "MM"}			F6, A1, F9 → "KitKat" B2 → "Nothing" F7, C3 → "Loop" B6 → "MM"
F1 F2 F2 F3 F3 F4 F4 F1 F5 F6 D8 C3 C3 B2 B2 A1 A1 Cupcake			F1, F2, F3, F4 → "loop" F5 → "Nothing" D8, C3, B2, A1 → "Cupcake"
A1 A2 A2 Gatorade A3 A4 A4 A3 A5 B9			A1, A2 → "Gatorade" A3, A4 → "Loop" A5 → "Nothing"

Problem 5: Newber

Sample Data

Input	Table Representation of input	Output	Explanation
map =	<pre>{ {-, -, , -} { , -, -, -} { , -, , 0} {X, -, , -} }</pre>	RUURRD	
map =	<pre>{ {-, -, X, -} { , -, , } { , -, , -} {-, -, -, 0} }</pre>	LDDRRR	
map =	<pre>{ {X, , -, -} {-, -, -, -} { , -, , } {-, -, -, 0} }</pre>	DRDDRR	
map =	<pre>{ {-, -, -, -} { , 0, , -} { , -, , -} { , -, -, X} }</pre>	LLUU	
map =	<pre>{ {X, -, -, -} { , , , -} {0, -, , -} { , -, -, -} }</pre>	RRRDDLLUL	

Problem 6: Mole in the Company

Input	Output	Explanation
3 1 2 9	9	
4 3 9 1 0 6 2 4 1	-12	
1 6 7 9 4 3 2 5 7 0 0 1 2 4 5 4 1 1 2 2 5 0 4 -2 3	21	
2 3 1 0 3 4 7 5 6 1 3 4 5 6 7 2 6 5 9 0 1 8 2 3 4 8 0 1 2 3 4 5 6 7 9 1 2 3 4 5 6 7 8 0 7 1 8 0 2 3 2 1 12 1 2 1 3 4 5 2 1 -2 3 4 3 2 4 5 0 2 9 2 5 3 2 1 2 2 -1 2 5	6874	

2 3 1 0 3 4 7 5 6 1 3 4 5 6 7 2 6 5 9 0 1 8 2 3 4 8 0 1 2 3 4 5 6 7 9 1 2 3 4 5
6 7 8 0 7 1 8 0 2 3 2 1 12 1 2 1 3 4 5 2 1 -2 3 4 3 2 4 5 0 2 9 2 5 3 2 1 2 2
-1 2 5