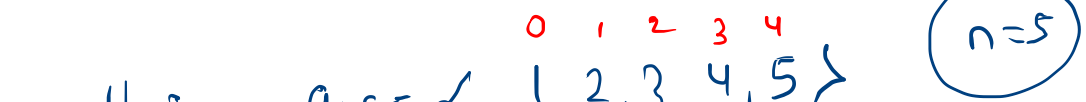
Gas Station

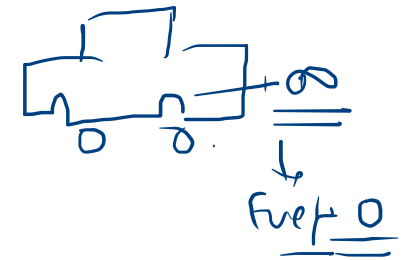


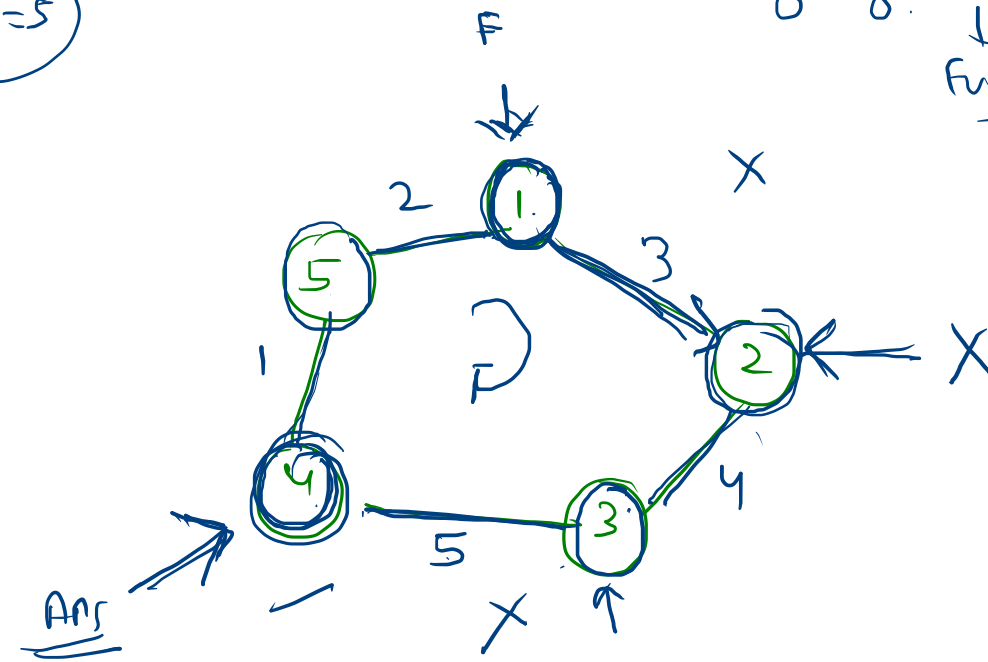
n=5

I/p : gas = { 1, 2, 3, 4, 5 }

cost = { 3, 4, 5, 1, 2 }

o/p : 3





f → 1

f → 4 - 1 = 3

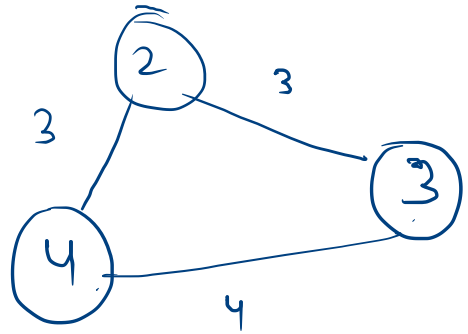
f + 3 + 5 = 8

f + 8 - 2 = 6 + 1 = 7

f → 7 - 3 = 4 + 1 = 6

f + 6 - 4 = 2 + 3 = 5

I/p:



O/p: -1

↳ Total fuel →

$2+3+4 = 9$

↳ Total dist →

$3+4+3 = 10$

X

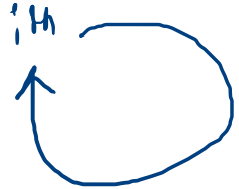
→ we know, we have 1 guaranteed answer.

Now, answer means, if we start from that i^{th} index and do a circular loop, we are able to reach i^{th} index again.

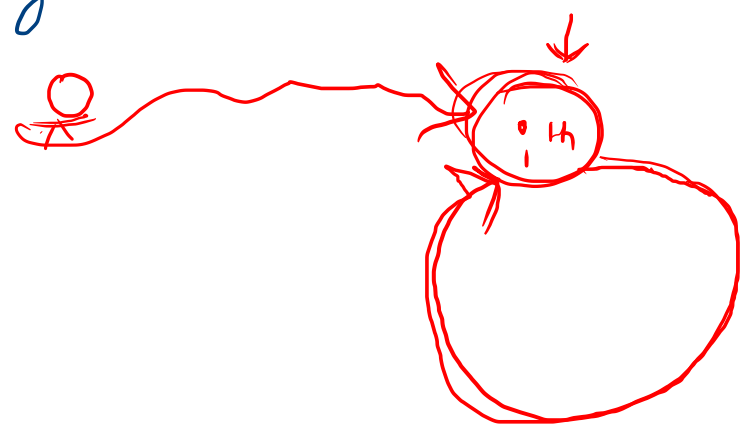
Answer means,

Let's say → i^{th} index is Answer.

⇒ if we start from i^{th} then, its surely that we are able to complete the circle,



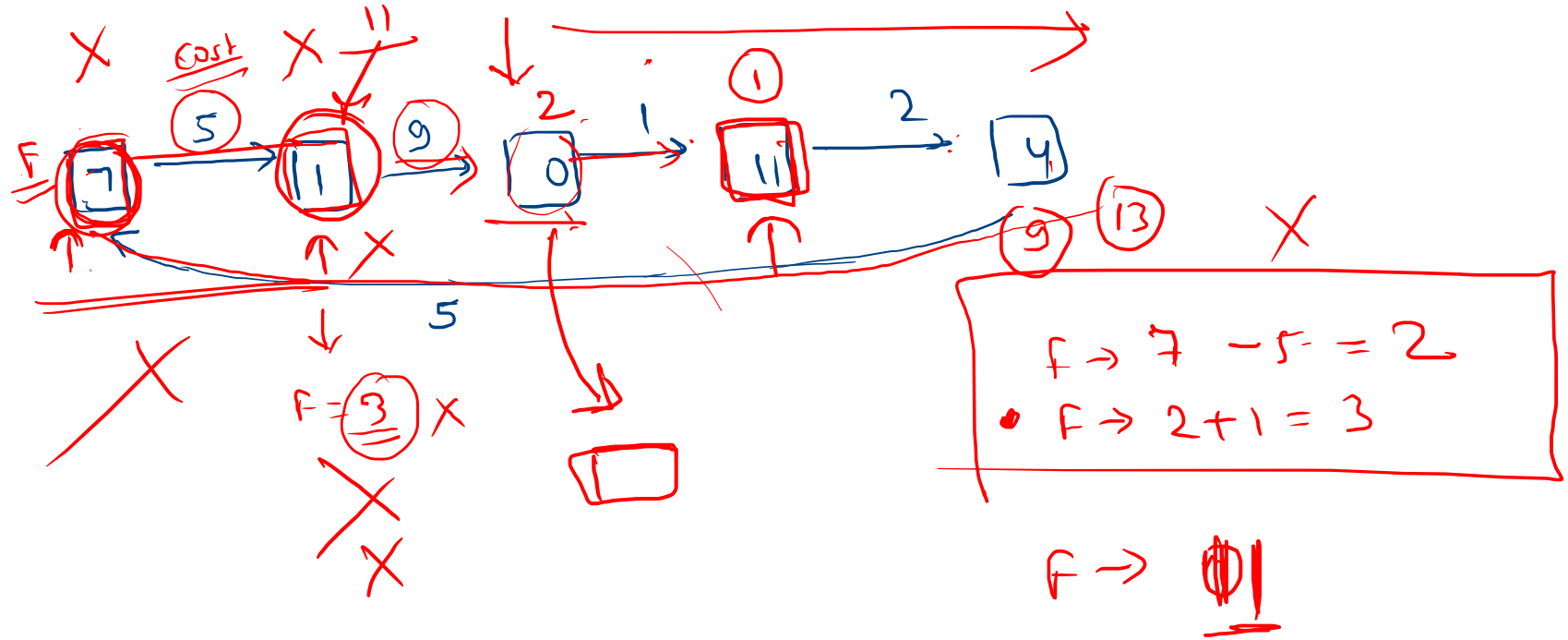
⇒ if A car crossed i^{th} index then surely car will complete the circle that's meaning of answer.



I/p: gas: { 7, 1, 0, 11, 4 }

cost: { 5, 9, 1, 2, 5 }

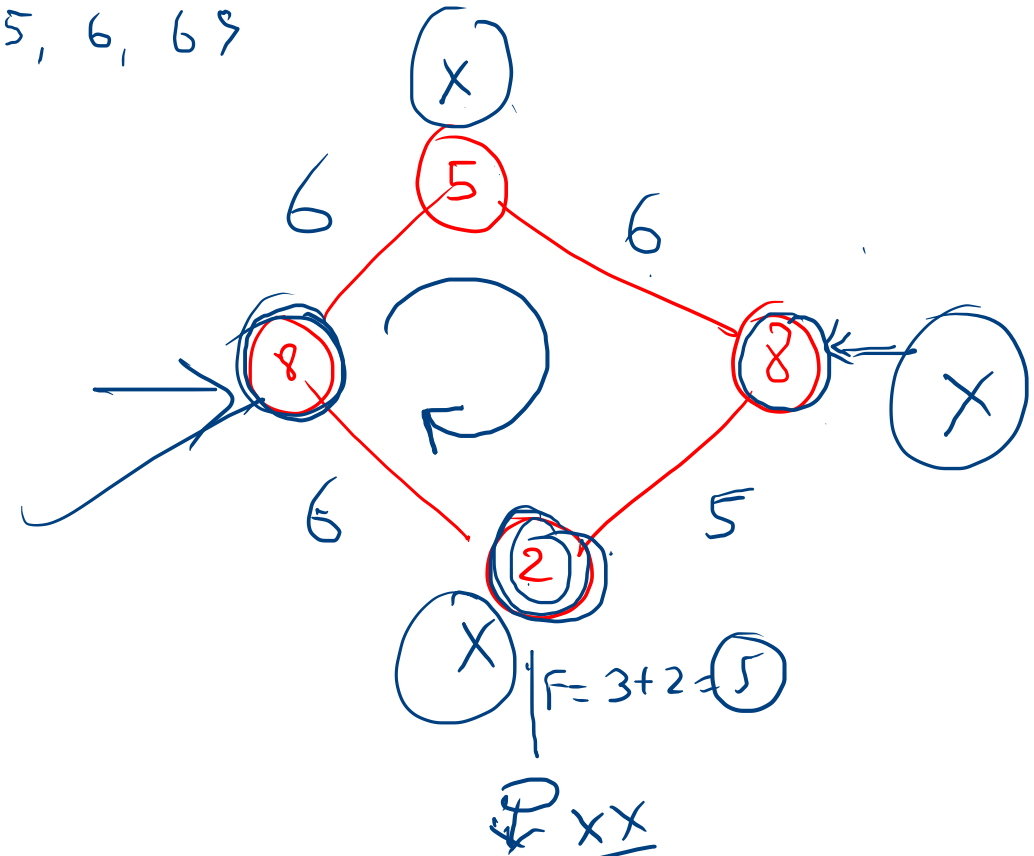
o/p:



I/p: gas: {5, 8, 2, 8}

Cost: {6, 5, 6, 6}

O/p:



F = 8

XX

Code : Pseudo Code

total

index = 0

-> traverse loop

i = [0, n-1]

int diff = gas[i] - cost[i]

total t = diff;

temp += diff;

if (temp < 0)

{

index = i+1;

temp = 0;

}

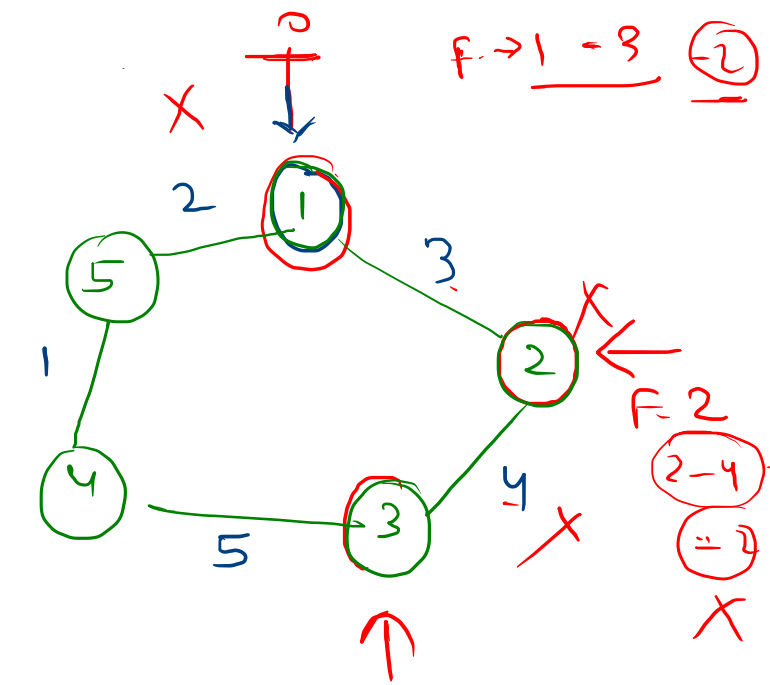
Use Case

↳ to check

total gas

- total cost

{ if -ve, then return -1 }



F -> 1 - 3 -2

$\sum gas - \sum Cost$