

CUMULATIVE FAIRNESS

Twins get the same pocket money,
but in different weeks.

How can this be organised fairly?

AB AB AB AB AB AB AB AB AB

ABBA ABBA ABBA ABBA ABBA

ABBABAB ABBABAB ABBABAB

AB

AB BA

ABBA BAAB

ABBABAAB BAABABBA

ABBABAABBAABBA BAABABBAABBABAAB

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A	B	B	A	B	A	A	B	B	A	A	B	A	B	B	A

$A \{1,4,6,7,10,11,13,16\}$ $B \{2,3,5,8,9,12,14,15\}$

THUE MORSE SEQUENCE

1001 0110 0110 1001 0110 1001 1001 0110 0110 1001 1001 0110 1001 0110 ...

1001 0110 0110 1001 0110 1001 1001 0110 0110 1001 1001 0110 1001 0110 ...

1 0 0 1 0 1 1 0 0 1 1 0 1 0 0 1 0 1 1 0 1 0 0 1 1 0 0 1 ...

1 0 0 1 0 1 1 0 0 1 1 0 1 0 0 1 0 1 1 0 1 0 0 1 1 0 0 1 ...

1 0 0 1 0 1 1 0 0 1 1 0 1 0 ...

THUE MORSE SEQUENCE

1001 0110 0110 1001 0110 1001 1001 0110 0110 1001 1001 0110 1001 0110 ...

How do you find the n th term?

How do you find the sum of the first n terms?