Fibonacci Sequences

Determine whether each of these sequences is a Fibonacci-like sequence.

(a) $1, 1, 2, 3, 5, 8, 13, \ldots$

(b) $1, 2, 3, 6, 11, 20, 37, \ldots$

(c) $2, 4, 6, 10, 16, 26, \ldots$

(d) $-1, 3, 2, 5, 7, 12, \ldots$

(a) Yes, THE Fibonacci sequence!

(b) No

(c) Yes

(d) Yes

Fill in the missing terms in each of these Fibonacci-like sequences.

1st	2nd	3rd	4th	5th	6th	7th	8th
1	3	4	7	11	18	29	47
2	7	9	16	25	41	66	107
2	5	7	12	19	31	50	81
4	7	11	18	29	47	76	123
7	13	20	33	53	86	139	225
-2	4	2	6	8	14	22	36
-1	10	9	19	28	47	75	122
-3	3	0	3	3	6	9	15

(a) Milly think that 70 is in the Fibonacci-like sequence that starts $6, 10, 16, 26, \ldots$ Is Milly correct? Explain your answer.

No $6, 10, 16, 26, 42, 68, 110$

Not 70

(b) A Fibonacci-like sequence contains the third term 10. Suggest two possible sequences, and give their first five terms.

(b) $3, 7, 10, 17, 27$

$1, 9, 10, 19, 29$

EXAMPLES

(c) The sum of the first three terms of a Fibonacci-like sequence is zero. What is the third term?

(c) 0

(d) The first two terms of a Fibonacci-like sequence are a and $2a$. Find the next five terms of the sequence.

(d) $a, 2a, 3a, 5a, 8a, 13a, 21a, \ldots$