{1, 2, 4, 5, 7, 8,…} and Primes

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Abstract

{1, 2, 4, 5, 7, 8,...} has some interesting properties.
In particular, I will discuss their relationship to prime numbers.

General comments

This study delves into the generative equation.

$$a_n=\{1,2,4,5,7,8,...\} \Rightarrow a_n=\frac{1}{4}\left(6n-3(-1)^{2n}+(-1)^{n+1}\right)$$

$$\Downarrow$$

$$a_n=\frac{1}{4}\left(6n-3(-1)^{2(n-1)}+(-1)^{n}\right),(\because n>2)$$

n	$b_n=10a_n,(\because n>2)$	$c_n=10+\sum_{k=1}^{n-1}b_k,(\because n>2)$	$1,or-1$ ($forprime$)	$2a_n$	$14+\sum_{k}^{n-1}(2a_k),(\because n>2)$	$1,or-1$ ($forprime$)	$16+\sum_{k}^{n-1}(2a_k),(\because n>2)$	$1,or-1$ ($forprime$)
1		10	+		14	−	16	+
2	10	20	−	2	16	+	18	−
3	20	40	+	4	20	−	22	+
4	40	80	−	8	28	+	30	−
5	50	130	+	10	38	−	40	+
6	70	200	−	14	52	+	54	−
7	80	280	+	16	68	−	70	+
8	100	380	−	20	88	+	90	−
9	110	490	+	22	110	−	112	+
10	130	620	−	26	136	+	138	−
11	140	760	+	28	164	−	166	+
12	160	920	−	32	196	+	198	−
13	170	1090	+	34	230	−	232	+
14	190	1280	−	38	268	+	270	−
15	200	1480	+	40	308	−	310	+
16	220	1700	−	44	352	+	354	−
17	230	1930	+	46	398	−	400	+
18	250	2180	−	50	448	+	450	−
19	260	2440	+	52	500	−	502	+
20	280	2720	−	56	556	+	558	−
21	290	3010	+	58	614	−	616	+
22	310	3320	−	62	676	+	678	−
23	320	3640		64	740	−	742	+
24	340	3980		68	808	+	810	−
25	350	4330		70	878	−	880	+
26	370	4700		74	952	+	954	−
27	380	5080		76	1028		1030	+
28	400	5480		80	1108		1110	−
29	410	5890		82	1190		1192	+
30	430	6320		86	1276		1278	−
31	440	6760		88	1364		1366	+

General comments

To some extent, I was able to find a continuous and regular prime number generating formula.