

Title: Prime number pattern (2,3,5,7)

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Subj-class: Theory number

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**Abstract:** This document exposes the construction of infinite patterns for prime numbers smaller than  $P$ .

In this case, the pattern for prime numbers less than 11 is graphic.

**Keywords:** 7-Golden Pattern, prime number, simple prime number.

Prime number pattern  $P < 11$

For more information: [https://www.academia.edu/37304741/7-Golden\\_Pattern](https://www.academia.edu/37304741/7-Golden_Pattern)

**Secuence: 7-Golden Pattern**

1, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97, 101, 103, 107, 109, 113, 121, 127, 131, 137, 139, 143, 149, 151, 157, 163, 167, 169, 173, 179, 181, 187, 191, 193, 197, 199, 209, 211, 221, 223, 227, 229, 233, 239, 241, 247, .....629

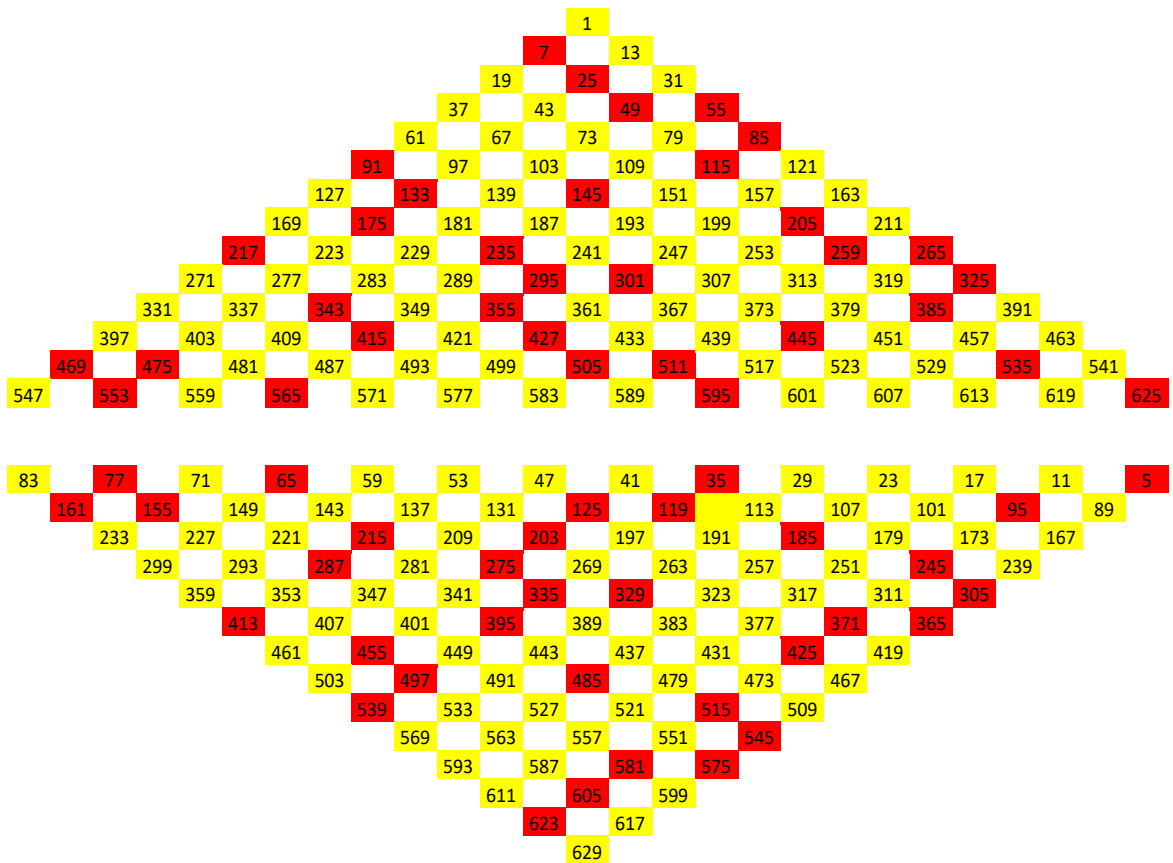
The Golden Pattern is until 630 and has three identical sectors, with only one difference in its digital root number.

A						B						A						B					
1	1	2	3	4	5	6	4	211	212	213	214	215	216	7	421	422	423	424	425	426			
	7	8	9	10	11	12	2	217	218	219	220	221	222	5	427	428	429	430	431	432			
4	13	14	15	16	17	18	8	7	223	224	225	226	227	228	2	1	433	434	435	436	437	438	
1	19	20	21	22	23	24	5	4	229	230	231	232	233	234	8	7	439	440	441	442	443	444	
	25	26	27	28	29	30	2		235	236	237	238	239	240	5		445	446	447	448	449	450	
4	31	32	33	34	35	36	8	7	241	242	243	244	245	246	2	1	451	452	453	454	455	456	
1	37	38	39	40	41	42	5	4	247	248	249	250	251	252	8	7	457	458	459	460	461	462	
7	43	44	45	46	47	48	2	1	253	254	255	256	257	258	5	4	463	464	465	466	467	468	
	49	50	51	52	53	54	8		259	260	261	262	263	264	2		469	470	471	472	473	474	
7	55	56	57	58	59	60	5	7	265	266	267	268	269	270	8	7	475	476	477	478	479	480	
	61	62	63	64	65	66	2	1	271	272	273	274	275	276	5	4	481	482	483	484	485	486	
4	67	68	69	70	71	72	8	7	277	278	279	280	281	282	2	1	487	488	489	490	491	492	
1	73	74	75	76	77	78	5	4	283	284	285	286	287	288	8	7	493	494	495	496	497	498	
7	79	80	81	82	83	84	2	1	289	290	291	292	293	294	5	4	499	500	501	502	503	504	
	85	86	87	88	89	90	8		295	296	297	298	299	300	2		505	506	507	508	509	510	
7	91	92	93	94	95	96	5	7	301	302	303	304	305	306	8	7	511	512	513	514	515	516	
	97	98	99	100	101	102	2	1	307	308	309	310	311	312	5	4	517	518	519	520	521	522	
4	103	104	105	106	107	108	8	7	313	314	315	316	317	318	2	1	523	524	525	526	527	528	
1	109	110	111	112	113	114	5	4	319	320	321	322	323	324	8	7	529	530	531	532	533	534	
	115	116	117	118	119	120	2		325	326	327	328	329	330	5		535	536	537	538	539	540	
4	121	122	123	124	125	126	8	7	331	332	333	334	335	336	2	1	541	542	543	544	545	546	
1	127	128	129	130	131	132	5	4	337	338	339	340	341	342	8	7	547	548	549	550	551	552	
	133	134	135	136	137	138	2		343	344	345	346	347	348	5		553	554	555	556	557	558	
4	139	140	141	142	143	144	8	7	349	350	351	352	353	354	2	1	559	560	561	562	563	564	
	145	146	147	148	149	150	5		355	356	357	358	359	360	8		565	566	567	568	569	570	
7	151	152	153	154	155	156	2	1	361	362	363	364	365	366	5	4	571	572	573	574	575	576	
4	157	158	159	160	161	162	8	7	367	368	369	370	371	372	2	1	577	578	579	580	581	582	
1	163	164	165	166	167	168	5	4	373	374	375	376	377	378	8	7	583	584	585	586	587	588	
	169	170	171	172	173	174	2	1	379	380	381	382	383	384	5	4	589	590	591	592	593	594	
7	175	176	177	178	179	180	8		385	386	387	388	389	390	2		595	596	597	598	599	600	
1	181	182	183	184	185	186	5	4	391	392	393	394	395	396	8	7	601	602	603	604	605	606	
	187	188	189	190	191	192	2	1	397	398	399	400	401	402	5	4	607	608	609	610	611	612	
4	193	194	195	196	197	198	8	7	403	404	405	406	407	408	2	1	613	614	615	616	617	618	
1	199	200	201	202	203	204	5	4	409	410	411	412	413	414	8	7	619	620	621	622	623	624	
	205	206	207	208	209	210	2		415	416	417	418	419	420	5		625	626	627	628	629	630	

## Another way to represent the Golden Pattern

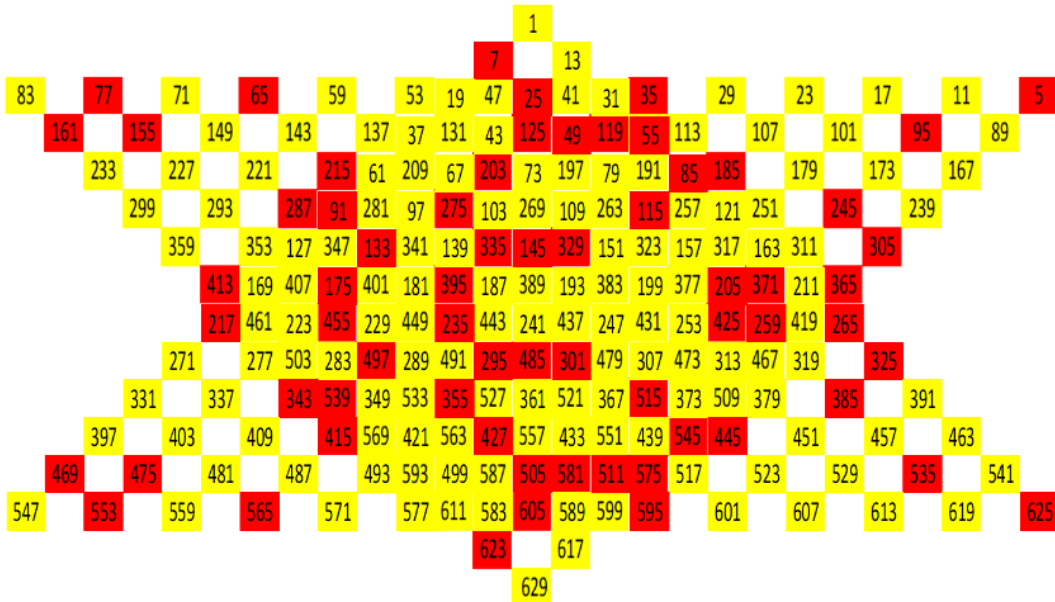
The sequence of 7- Golden Pattern forms two mirrored triangles, if we position each value with its mirror value they add up in all cases 630.

The upper triangle is of the form  $A = 6n + 1$  and the lower one of  $B = 6n - 1$



## Playing with the 7-Golden-Pattern

If we join both triangles, a 6-pointed star is formed, which contains mirror patterns if we split the star in half horizontally. Also the empty boxes are occupied by the other triangle forming in the center a complete rectangle.



## 7-Golden Pattern, formula to get the sequence.

$P_7(A) = S. \text{Prime numbers} - 7 \text{ in column}(A)$ $Z = \text{numbers} \geq 0$	$P_7(B) = S. \text{Prime numbers} - 7 \text{ in column}(B)$ $Z = \text{numbers} \geq 0$
$P_7(A) = (6 * n \begin{matrix} n \geq 0 \\ n \neq 4+5*Z \\ n \neq 1+7*Z \end{matrix} + 1)$ <p><math>n \neq 1, 4, 8, 9, 14, 15, 19, 22, 24, \dots</math></p> <p>using missing values:  <math>n = 0, 2, 3, 5, 6, 7, 10, 11, 12, 13, \dots</math></p> <p>We get the following Simple prime numbers-7.</p> $P_7(A) = 1, 13, 19, 31, 37, 43, 61, 67, 73, 79, 97, \dots$	$P_7(B) = (6 * n \begin{matrix} n > 1 \\ n \neq 6+5*Z \\ n \neq 6+7*Z \end{matrix} - 1)$ <p><math>n \neq 6, 11, 13, 16, 20, 21, 26, 27, \dots</math></p> <p>using missing values:  <math>n = 2, 3, 4, 5, 7, 8, 9, 10, 12, 14, 15, \dots</math></p> <p>We get the following Simple prime numbers-7.</p> $P_7(B) = 11, 17, 23, 29, 41, 47, 53, 59, 71, 83, 89, 101, \dots$

**References**

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