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2019 IMSO Answers

SHORT ANSWER

1.	30	2.	90	3.	Chin	4.	blue	5.	54.6
6.	48	7.	3:32	8.	7	9.	60, 16, 6, 6, 6, 6	10.	421
11.	48	12.	90	13.	2	14.	41	15.	9
16.	12	17.	243	18.	18	19.	29	20.	168
21.	2	22.	$\frac{2019}{7}$	23.	120	24.	A, B and D	25.	41

ESSAY PROBLEMS

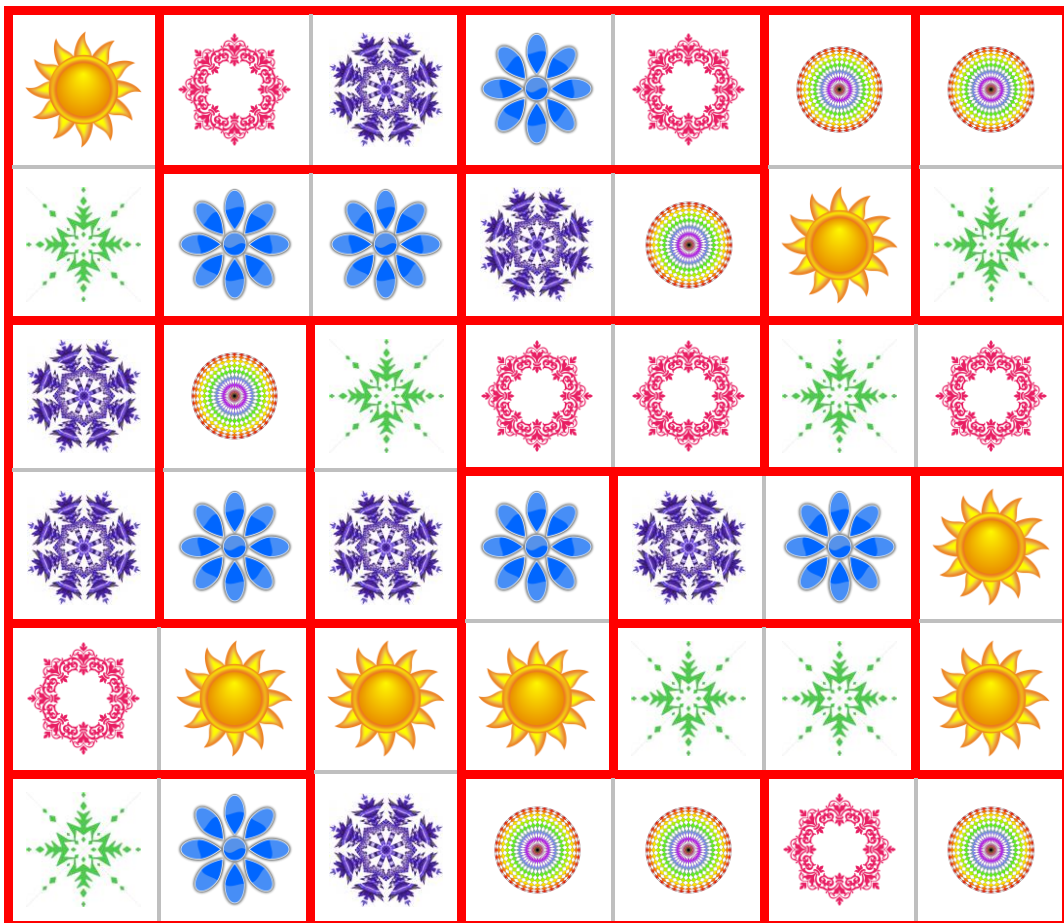
1.	171	2.	8, 26	3.	7	4.	50
5.							
6.	8	7.	3	8.	150	<div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 10px;">9.</div> <div style="text-align: center;"> <p>40,</p> </div> </div>	
10.	<p>774 digits can be omitted and the biggest number is $\underbrace{999\dots 999}_{224 \text{ terms}} 21$</p>						
11.	5	12.	1296	13.	5764		

EXPLORATION PROBLEMS

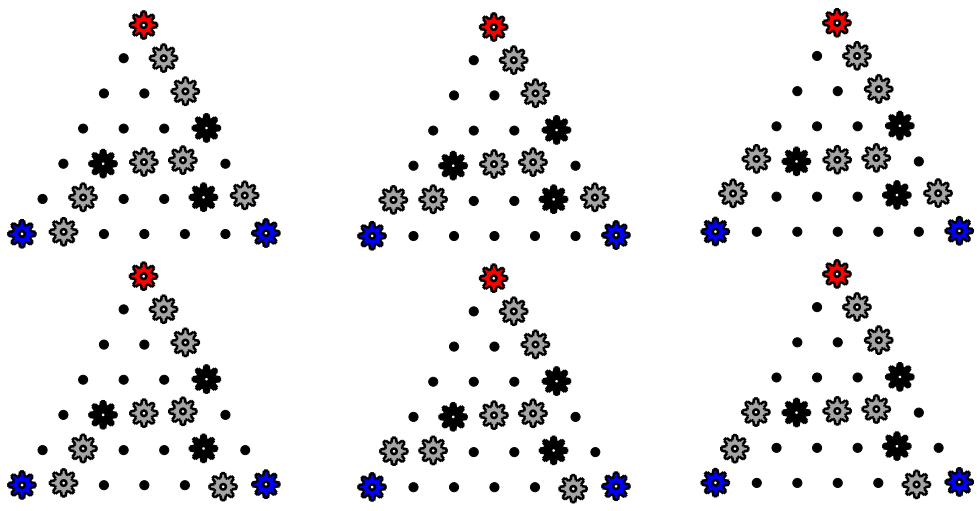
1.

123459	152943	219345	291354	342951	413259	452193	523194	592431	924315
124593	154329	219534	291543	345219	413952	452319	524139	593124	925134
125349	154392	231945	294315	345912	421953	459123	524391	594132	931245
132594	159243	234591	295134	349125	423591	459312	529431	594321	934521
134295	159432	235914	312459	349251	429135	491253	534219	912345	935214
134925	193452	241395	315294	352149	429513	492135	534912	912534	941325
135429	194523	243159	315924	354291	431529	492513	542913	913542	943152
135492	195342	243915	319452	354921	431592	493521	543291	914235	943215
139524	213549	245931	321594	359142	432159	513429	543921	915243	945231
142359	214935	251349	325941	391524	432915	513492	549213	915432	951342
149352	215439	253491	329154	392154	439152	521493	591234	921354	952413
152439	215943	259413	342195	395241	439215	521934	591423	921543	953421

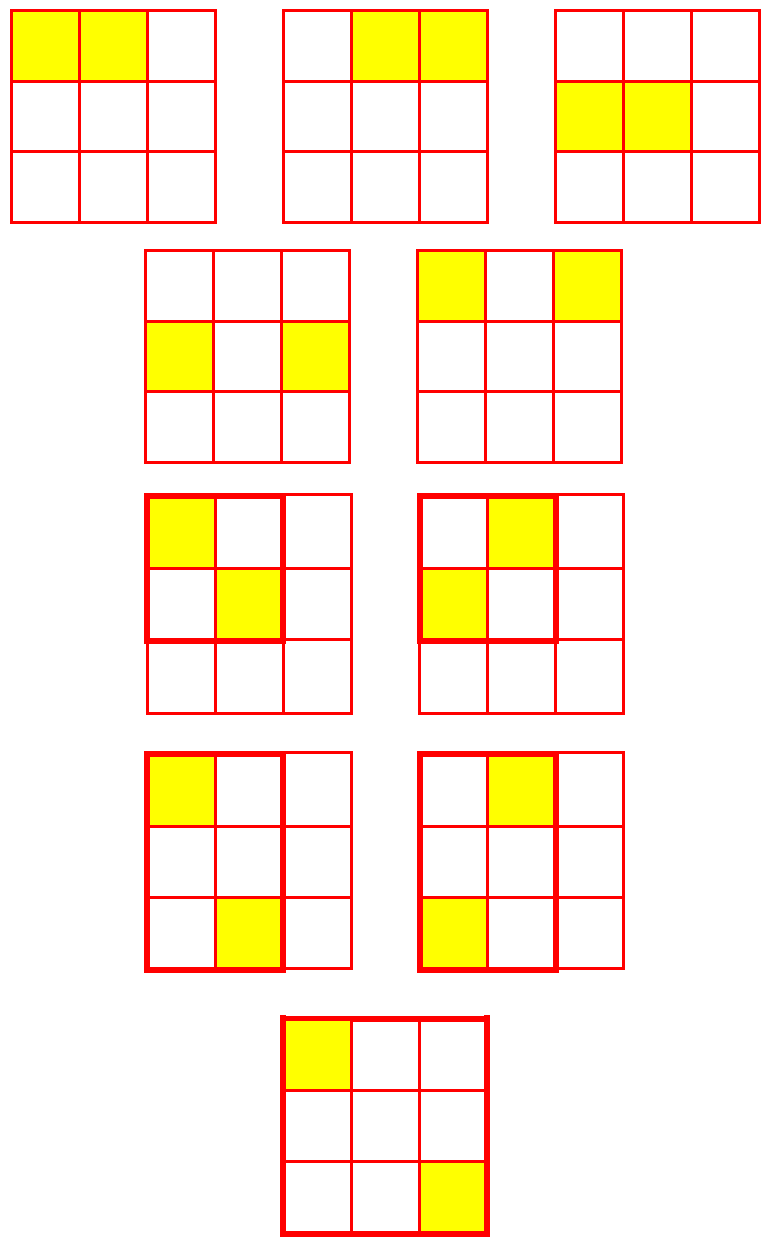
2.



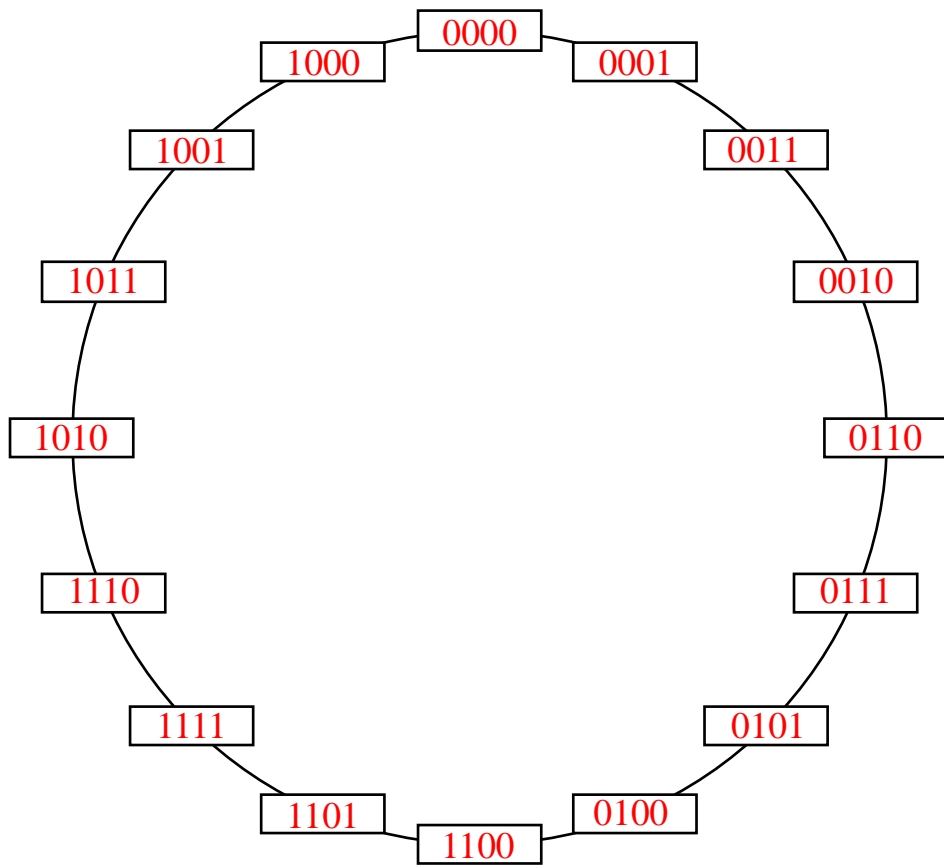
3.



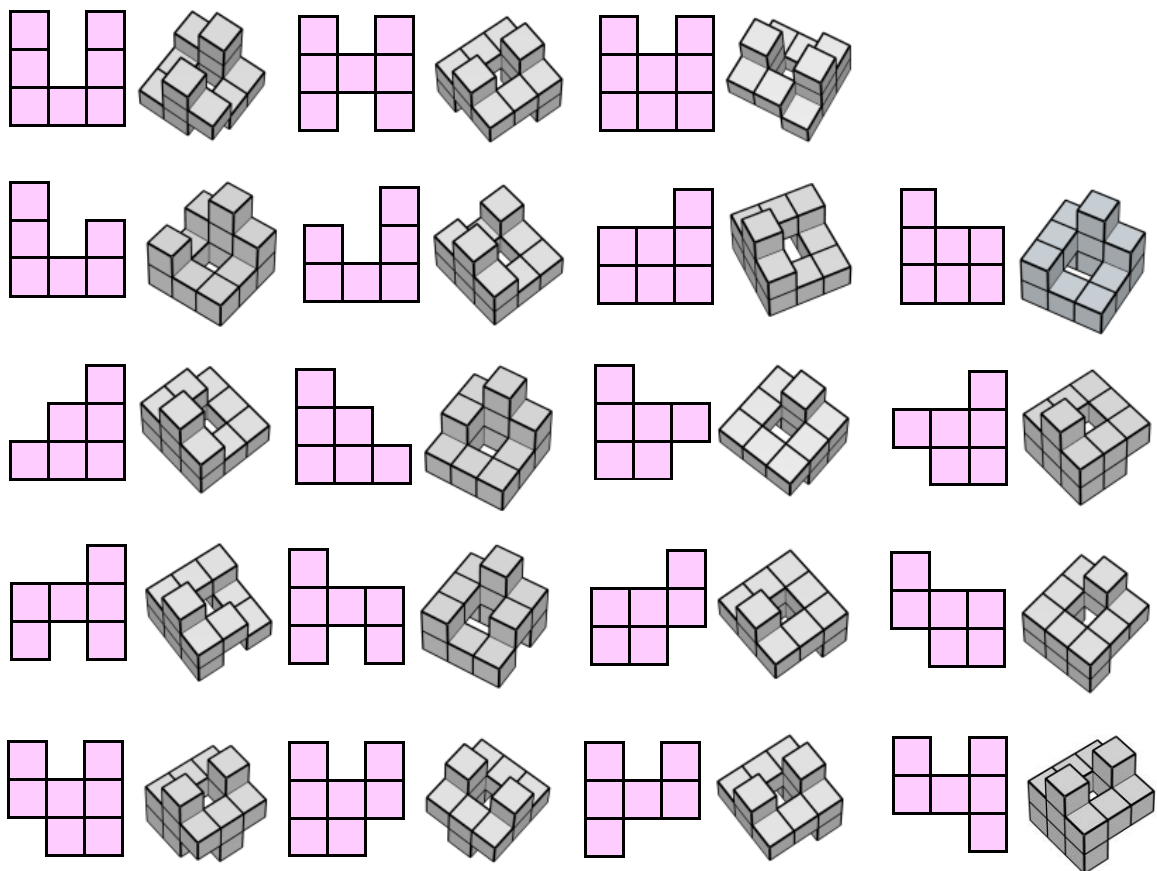
4.



5.



6.



Note that the 3D shape for each side view is not unique.