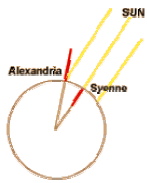


ERATOSTHENES OF CYRENE (modern-day Libya) 276BC-194BC was a Greek mathematician, poet, athlete, geographer, and astronomer.

HE WAS THE FIRST TO CALCULATE THE CIRCUMFERENCE OF THE EARTH

After studying in Alexandria and Athens, he became the director of the Great Library in Alexandria.

It was there where he read about a deep vertical well near Syene (now Aswan) in southern Egypt, which, once a year at noon (on the day of the Summer Solstice), was entirely lit up to the bottom by the sun, that is, the sun was directly overhead, with its rays shining directly into it.



He then placed a vertical post at Alexandria (which was almost due north of Syenne) and measured the angle of its shadow on that exact date and time.

Making the assumptions that (a) the earth is round and that (b) the sun's rays are essentially parallel, Eratosthenes knew from geometry that the size of the measured angle equaled the size of the angle at the earth's center between Syene and Alexandria.

Knowing also that the arc of an angle this size was 1/50 of a circle, and that the distance between Syene and Alexandria was 5000 stadia, he multiplied 5000 by 50 to find the earth's circumference.

His result, 250,000 stadia (about 46,250 km), is quite close to modern measurements.

Eratosthenes also determined the obliquity of the Ecliptic, measured the tilt of the earth's axis with great accuracy obtaining the value of $23^{\circ} 51' 15''$, prepared a star map containing 675 stars, suggested that a leap day be added every fourth year and tried to construct an accurately-dated history.

"X OUT" ALL OF THE NUMBERS THAT ARE NOT PRIME (1 OR COMPOSITE)
THE RESULT ARE THE FIRST 78 PRIME NUMBERS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220
221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240
241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260
261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280
281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300
301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320
321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340
341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360
361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380
381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400

SIEVE OF ERATOSTHENES -- simple method of finding prime numbers

- first, eliminate all even numbers (except for 2 which is the first prime number)
- second, eliminate all multiples of 3 (except for 3 which is a prime number)
- third, eliminate all multiples of 5 (except for 5 which is a prime number)
- fourth, eliminate all multiples of 7 (except for 7 which is a prime number)
-and so on until you are only left with prime numbers

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220
221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240
241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260
261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280
281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300
301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320
321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340
341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360
361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380
381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400

WHAT WE HAVE LEFT ARE THE FIRST 78 PRIME NUMBERS

		Eratosthenes' sieve																			
8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
4	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	25 in 1st 100
5	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	
5	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	
3	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	
5	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	21 in 2nd 100
4	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	
4	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	
5	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	
1	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	16 in 3rd 100
5	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	
5	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	
3	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	
4	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	
3	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	
4	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	16 in 4th 100
2	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	
4	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	
3	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	
3	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	