

A.4

Powers, Roots, and Prime Factorizations

No.	Square	Square Root	Cube	Cube Root	Prime Factorization
1	1	1.0000	1	1.0000	
2	4	1.4142	8	1.2599	prime
3	9	1.7321	27	1.4422	prime
4	16	2.0000	64	1.5874	$2 \cdot 2$
5	25	2.2361	125	1.7100	prime
6	36	2.4495	216	1.8171	$2 \cdot 3$
7	49	2.6458	343	1.9129	prime
8	64	2.8284	512	2.0000	$2 \cdot 2 \cdot 2$
9	81	3.0000	729	2.0801	$3 \cdot 3$
10	100	3.1623	1000	2.1544	$2 \cdot 5$
11	121	3.3166	1331	2.2240	prime
12	144	3.4641	1728	2.2894	$2 \cdot 2 \cdot 3$
13	169	3.6056	2197	2.3513	prime
14	196	3.7417	2744	2.4101	$2 \cdot 7$
15	225	3.8730	3375	2.4662	$3 \cdot 5$
16	256	4.0000	4096	2.5198	$2 \cdot 2 \cdot 2 \cdot 2$
17	289	4.1231	4913	2.5713	prime
18	324	4.2426	5832	2.6207	$2 \cdot 3 \cdot 3$
19	361	4.3589	6859	2.6684	prime
20	400	4.4721	8000	2.7144	$2 \cdot 2 \cdot 5$
21	441	4.5826	9261	2.7589	$3 \cdot 7$
22	484	4.6904	10,648	2.8020	$2 \cdot 11$
23	529	4.7958	12,167	2.8439	prime
24	576	4.8990	13,824	2.8845	$2 \cdot 2 \cdot 2 \cdot 3$
25	625	5.0000	15,625	2.9240	$5 \cdot 5$
26	676	5.0990	17,576	2.9625	$2 \cdot 13$
27	729	5.1962	19,683	3.0000	$3 \cdot 3 \cdot 3$
28	784	5.2915	21,952	3.0366	$2 \cdot 2 \cdot 7$
29	841	5.3852	24,389	3.0723	prime
30	900	5.4772	27,000	3.1072	$2 \cdot 3 \cdot 5$
31	961	5.5678	29,791	3.1414	prime
32	1024	5.6569	32,768	3.1748	$2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$
33	1089	5.7446	35,937	3.2075	$3 \cdot 11$
34	1156	5.8310	39,304	3.2396	$2 \cdot 17$

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35	1225	5.9161	42,875	3.2711	$5 \cdot 7$
36	1296	6.0000	46,656	3.3019	$2 \cdot 2 \cdot 3 \cdot 3$
37	1369	6.0828	50,653	3.3322	prime
38	1444	6.1644	54,872	3.3620	$2 \cdot 19$
39	1521	6.2450	59,319	3.3912	$3 \cdot 13$
40	1600	6.3246	64,000	3.4200	$2 \cdot 2 \cdot 2 \cdot 5$
41	1681	6.4031	68,921	3.4482	prime
42	1764	6.4807	74,088	3.4760	$2 \cdot 3 \cdot 7$
43	1849	6.5574	79,507	3.5034	prime
44	1936	6.6332	85,184	3.5303	$2 \cdot 2 \cdot 11$
45	2025	6.7082	91,125	3.5569	$3 \cdot 3 \cdot 5$
46	2116	6.7823	97,336	3.5830	$2 \cdot 23$
47	2209	6.8557	103,823	3.6088	prime
48	2304	6.9282	110,592	3.6342	$2 \cdot 2 \cdot 2 \cdot 2 \cdot 3$
49	2401	7.0000	117,649	3.6593	$7 \cdot 7$
50	2500	7.0711	125,000	3.6840	$2 \cdot 5 \cdot 5$
51	2601	7.1414	132,651	3.7084	$3 \cdot 17$
52	2704	7.2111	140,608	3.7325	$2 \cdot 2 \cdot 13$
53	2809	7.2801	148,877	3.7563	prime
54	2916	7.3485	157,464	3.7798	$2 \cdot 3 \cdot 3 \cdot 3$
55	3025	7.4162	166,375	3.8030	$5 \cdot 11$
56	3136	7.4833	175,616	3.8259	$2 \cdot 2 \cdot 2 \cdot 7$
57	3249	7.5498	185,193	3.8485	$3 \cdot 19$
58	3364	7.6158	195,112	3.8709	$2 \cdot 29$
59	3481	7.6811	205,379	3.8930	prime
60	3600	7.7460	216,000	3.9149	$2 \cdot 2 \cdot 3 \cdot 5$
61	3721	7.8102	226,981	3.9365	prime
62	3844	7.8740	238,328	3.9579	$2 \cdot 31$
63	3969	7.9373	250,047	3.9791	$3 \cdot 3 \cdot 7$
64	4096	8.0000	262,144	4.0000	$2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$
65	4225	8.0623	274,625	4.0207	$5 \cdot 13$
66	4356	8.1240	287,496	4.0412	$2 \cdot 3 \cdot 11$
67	4489	8.1854	300,763	4.0615	prime
68	4624	8.2462	314,432	4.0817	$2 \cdot 2 \cdot 17$
69	4761	8.3066	328,509	4.1016	$3 \cdot 23$
70	4900	8.3666	343,000	4.1213	$2 \cdot 5 \cdot 7$
71	5041	8.4261	357,911	4.1408	prime

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72	5184	8.4853	373,248	4.1602	$2 \cdot 2 \cdot 2 \cdot 3 \cdot 3$
73	5329	8.5440	389,017	4.1793	prime
74	5476	8.6023	405,224	4.1983	$2 \cdot 37$
75	5625	8.6603	421,875	4.2172	$3 \cdot 5 \cdot 5$
76	5776	8.7178	438,976	4.2358	$2 \cdot 2 \cdot 19$
77	5929	8.7750	456,533	4.2543	$7 \cdot 11$
78	6084	8.8318	474,552	4.2727	$2 \cdot 3 \cdot 13$
79	6241	8.8882	493,039	4.2908	prime
80	6400	8.9443	512,000	4.3089	$2 \cdot 2 \cdot 2 \cdot 2 \cdot 5$
81	6561	9.0000	531,441	4.3267	$3 \cdot 3 \cdot 3 \cdot 3$
82	6724	9.0554	551,368	4.3445	$2 \cdot 41$
83	6889	9.1104	571,787	4.3621	prime
84	7056	9.1652	592,704	4.3795	$2 \cdot 2 \cdot 3 \cdot 7$
85	7225	9.2195	614,125	4.3968	$5 \cdot 17$
86	7396	9.2736	636,056	4.4140	$2 \cdot 43$
87	7569	9.3274	658,503	4.4310	$3 \cdot 29$
88	7744	9.3808	681,472	4.4480	$2 \cdot 2 \cdot 2 \cdot 11$
89	7921	9.4340	704,969	4.4647	prime
90	8100	9.4868	729,000	4.4814	$2 \cdot 3 \cdot 3 \cdot 5$
91	8281	9.5394	753,571	4.4979	$7 \cdot 13$
92	8464	9.5917	778,688	4.5144	$2 \cdot 2 \cdot 23$
93	8649	9.6437	804,357	4.5307	$3 \cdot 31$
94	8836	9.6954	830,584	4.5468	$2 \cdot 47$
95	9025	9.7468	857,375	4.5629	$5 \cdot 19$
96	9216	9.7980	884,736	4.5789	$2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 3$
97	9409	9.8489	912,673	4.5947	prime
98	9604	9.8995	941,192	4.6104	$2 \cdot 7 \cdot 7$
99	9801	9.9499	970,299	4.6261	$3 \cdot 3 \cdot 11$
100	10,000	10.0000	1,000,000	4.6416	$2 \cdot 2 \cdot 5 \cdot 5$