Integers *n* that are *k*-powerful. Compiled by Stan Wagon, Jan. 2019.

For $k = 5$: see A323610; $k = 6$: see A323629; $k = 7$: see A323614.

	smaller than critical power of 2	2^{k+1}											differences Δ	notes
$k = -1$		$\underline{1}$	2	3	4	5	6	7	8	9	10	$\to\infty$	1	symmetric
$k = 0$		$\underline{2}$	4	6	8	10	12	14	16	18	20	$\to\infty$	2	antisymmetric
$k = 1$		$\underline{4}$	8	12	16	20	24	28	32	36	40	$\to\infty$	4	symmetric
$k = 2$		$\underline{8}$	$\underline{12}$	16	20	24	28	32	36	40	44	$\to\infty$	4	antisymmetric
$k = 3$		$\underline{16}$	24	32	40	48	56	64	72	80	88	$\to\infty$	8	symmetric
$k = 4$		$\underline{32}$	$\underline{40}$	48	$\overline{56}$	64	72	80	88	96	104	$\to\infty$	8	antisymmetric
$k = 5$	$\underline{48}$	$\overline{64}$	$\overline{72}$	$\overline{80}$	88	96	104	112	120	128	136	$\to\infty$	8	symmetric
$k = 6$	$\overline{96}$	$\overline{128}$	144	160	176	192	200	208	216	224	232	$\to\infty$	8	antisymmetric
$k = 7$	$\overline{144}$ $\overline{192}$ 208 224 240	$\overline{256}$	272	288	304	320	336	352	368	384	400	$\to\infty$	16	symmetric
$k = 8$	192 is first possibility	$\overline{512}$	544										16?	antisymmetric? 256 fails

Red entries are those that are not part of the ultimate arithmetic progression that holds out to infinity. Underlined entries admit a unique witnessing set. Overlined entries are not unique (and many of the unmarked ones are not unique). Essentially nothing is known about $k = 8$. The discoverers of the final complete sequence are:

- $k = 2$ and 3: David Boyd
- $k = 4$ and 5: Berend and Golan
- $k = 6$ and 7: Golan, Pratt, and Wagon

Some of the negative results for $k = 6$ and 7 are by Berend and Golan.