

Hello (again) SeqFan & Math-fun,

Here are a few Kimberlike sequences computed by **Gilles Sadowski** (for k=2 to k=10 ; see a short explanation [here](#)),
 Best,
 É.
 [k=2 is [A026272](#)]

```
(k=2): 1, 2, 1, 3, 2, 4, 5, 3, 6, 7, 4, 8, 5, 9, 10, 6, 11, 7, 12, 13, 8, 14, 15, 9, 16, 10, 17, 18, 11, 19, 20, 12, 21, 13, 22, 23, 14, 24, 15, 25, 26, 16, 27, 28, 17, 29, 18, 30,
(k=3): 1, 3, 1, 4, 1, 3, 5, 6, 4, 3, 8, 10, 5, 4, 6, 7, 9, 11, 5, 8, 13, 6, 10, 7, 2, 12, 9, 2, 8, 11, 2, 7, 14, 10, 13, 16, 9, 17, 12, 18, 15, 11, 20, 21, 22, 24, 19, 14, 13, 25, 23,
(k=4): 1, 3, 1, 6, 1, 3, 1, 7, 5, 3, 6, 10, 8, 3, 5, 7, 11, 6, 13, 14, 5, 8, 10, 7, 6, 9, 5, 15, 11, 17, 8, 7, 13, 10, 14, 9, 16, 12, 19, 8, 11, 24, 18, 15, 10, 9, 13, 17, 2, 14, 12, 2
(k=5): 1, 3, 1, 7, 1, 3, 1, 8, 1, 3, 9, 7, 2, 3, 13, 2, 8, 3, 2, 7, 9, 2, 10, 12, 2, 8, 18, 7, 13, 11, 9, 14, 19, 10, 8, 7, 12, 16, 20, 23, 9, 11, 13, 8, 10, 18, 14, 25, 29, 12, 9, 22,
(k=6): 1, 3, 1, 7, 1, 3, 1, 10, 1, 3, 1, 7, 11, 3, 5, 12, 14, 3, 10, 7, 5, 3, 16, 23, 11, 19, 5, 7, 12, 10, 21, 14, 5, 24, 15, 7, 11, 25, 5, 16, 10, 12, 34, 7, 5, 19, 14, 23, 11, 29,
(k=7): 1, 3, 1, 7, 1, 3, 1, 12, 1, 3, 1, 7, 1, 3, 9, 14, 19, 3, 21, 7, 12, 3, 29, 15, 9, 3, 20, 7, 32, 23, 14, 18, 16, 12, 9, 7, 19, 41, 34, 15, 21, 49, 37, 7, 9, 14, 12, 20, 44, 16,
(k=8): 1, 3, 1, 7, 1, 3, 1, 14, 1, 3, 1, 7, 1, 3, 1, 15, 9, 3, 19, 7, 20, 3, 14, 30, 23, 3, 9, 7, 31, 3, 24, 15, 28, 39, 33, 7, 9, 14, 19, 25, 43, 20, 58, 7, 44, 41, 9, 15, 23, 21, 18
(k=9): 1, 3, 1, 7, 1, 3, 1, 15, 1, 3, 1, 7, 1, 3, 1, 16, 1, 3, 9, 7, 10, 3, 23, 15, 12, 3, 38, 7, 9, 3, 26, 10, 16, 3, 39, 7, 43, 12, 9, 15, 32, 19, 10, 7, 40, 45, 23, 61, 9, 16, 12, 7
(k=10): 1, 3, 1, 7, 1, 3, 1, 15, 1, 3, 1, 7, 1, 3, 1, 18, 1, 3, 1, 7, 5, 3, 23, 15, 27, 3, 5, 7, 28, 3, 11, 31, 5, 3, 18, 7, 42, 3, 5, 15, 52, 19, 11, 7, 5, 50, 23, 34, 55, 73, 5, 7, 27,
[Currently missing integers for k=10 after computation of sequence's first 5000 terms:
2, 4, 6, 8, 9, 10, 12, 13, 14, 16, 17, 20, 21, 22, 24, 25, 26, 29, 30, 32, 33, 35, 36, 37, 38, 40, 41, 43, 45, 47, 53, 54, 56, 57, 58, 60, 61, 62, 63, 64, 65, 67, 68, 72, 74, 75, 7
```

P.-S.
 A short time after this post, **Hugo P.** replied to SeqFan (march 10th, 2006):

I have every confidence that every n will appear in the sequence for any k, but no idea how you might prove it.

I knocked up a program to find where 2 would get inserted for various k:

k	n	used	shown	passed	seq
2	2	1	1	0	1
3	2	11	24	1	23
4	2	18	48	5	60
5	2	5	12	3	36
6	2	346	1384	14	1785
7	2	5725	26336	70	34759
8	2	9833	50715	180	69998
9	2	38238	217258	734	311739
10	2	33637	211951	1238	313806

For k=3, these mean that when the first 2 appeared there were 24 numbers to its left in the sequence ('shown'), and 23 numbers (or holes) already known to its right ('seq'); 11 different numbers appeared before the first 2 ('used'), and 1 number had been 'passed' (ie out of 1..13, one number has not yet been used).

For k = 10, n in (1 .. 100), here are the 'used' values:

```
(n=1..10) 0 33637 1 79609 5 48647 2 37597 133669 87742
(n=11..20) 9 49117 27191 58164 3 83523 91922 4 13 120918
(n=21..30) 67986 98032 6 82594 38993 43316 7 8 104427 42940
(n=31..40) 10 102548 80105 15 104550 52375 58202 96393 22 42760
(n=41..50) 48638 11 66769 19 73314 28 80498 18 26 14
(n=51..60) 36 12 92532 83185 16 26380 81768 38333 20 103525
(n=61..70) 37957 30080 64703 92274 38747 23 98316 75075 31 32
(n=71..80) 34 38622 17 67139 42371 96870 48 24 25 91412
(n=81..90) 91652 73714 46186 81232 27 30 21 58 33 46
(n=91..100) 65989 98462 65864 63 66631 29 64 39 82235 83836
```

It took about 17 minutes to find them all; last to appear was 9:

k	n	used	shown	passed	seq
10	9	133669	840571	9207	1257313

and peak values of 'passed' and 'seq' (within the 100 results captured) appear at the previous number:

```
10 20 120918 764934 21958 1268672
```

Hope this helps,

Hugo

Thanks -- great job, Hugo!

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