CORRIGENDUM TO "ON THE DIVISIBILITY OF $\binom{n-i-1}{i-1}$ BY i" [INT. J. NUMBER THEORY 3 (2007) 119]

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Abstract. Association of some integers $n \geq 54$ to divisibility classes in the Shevelev article of 2007 is corrected.

1. Summary

The examples in Section 5 of Shevelev's article on the divisors of binomials are faulty where they concern the cases $n = 54, 60, 68, 70, 72, 78, 91$, and 96 [1].

1.1. **Section 1.** On page 121, the list of n for which B_n contains a divisor of n should be extended to 18, 45, 48, 70, 72, 75, 84, 90, 100. We note that this list contains 74 members in the range $n \leq 500$, 174 members in the range $n \leq 1000$, 274 members in the range $n \leq 1500$, and 379 members in the range $n \leq 2000$.

1.2. **Section 5.1.** A corrected and slightly extended list in Section 5.1 is:

$b(n) = 0$. n =1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 17, 19, 20, 21, 23, 24, 25, 29, 31, 33, 35, 37, 41, 43, 47, 49, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97, 101, ...

$b(n) = 1$. n =14, 16, 18, 22, 27, 28, 39, 55, 65, 77, 85, 221, 437, ...

$b(n) = 2$. n =26, 30, 36, 40, 42, 44, 91, 95, 115, 119, 133, 161, 187, 247, 391, 667, 1147, ...

$b(n) = 3$. n =32, 38, 45, 51, 52, 56, 57, 63, 69, 87, 145, 209, 713, 1073, ...

$b(n) = 4$. n =34, 75, 84, 93, 125, 155, 203, 217, 253, 259, 299, 319, 341, 551, ...

$b(n) = 5$. n =46, 48, 60, 68, 76, 81, 105, 377, 403, 407, 481, 493, 533, 589, 1189, ...

$b(n) = 6$. n =50, 54, 72, 88, 99, 287, 301, 329, 527, 559, 851, ...

$b(n) = 7$. n =70, 78, 80, 111, 185, 371, 451, 629, 697, 731, 799, 901, ...

$b(n) = 8$. n =58, 64, 66, 74, 92, 104, 473, 517, 583, 611, 703, 779, 817, 893, 943, 1007, 1121, ...

$b(n) = 9$. n =86, 117, 123, 175, 205, 343, 649, 989, 1159, ...

$b(n) = 10$. n =82, 90, 96, 100, 129, 135, 140, 215, 413, 671, 689, 767, 793, 871, 1003, 1081, ...

$b(n) = 11$. n =62, 120, 427, 1037, ...

$b(n) = 12$. n =116, 141, 153, 235, 737, 781, 803, 869, 923, ...

$b(n) = 13$. n =102, 108, 112, 136, 147, 171, 265, 949, ...

$b(n) = 14$. n =106, 110, 148, 152, 295, 305, 335, 469, 913, 1139, ...

$b(n) = 15$. n =94, 159, 165, 177, 183, 195, 355, 365, 1027, 1079, 1157, ...

$b(n) = 16$. n =98, 124, 201, 207, 245, 395, 497, 979, 1067, 1111, ...

$b(n) = 17$. n =114, 132, 164, 275, 511, 1133, ...

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$b(n) = 18$. n =168, 172, 189, 213, 219, 237, 249, 415, ...
$b(n) = 19$. n =118, 128, 156, 184, 231, 325, 1177, ...
$b(n) = 20$. n =130, 154, 261, 553, 1199, ...

1.3. **Section 5.2.** Associated corrections to Section 5.2 are:
$B_{39} = \{9\}$,
$B_{54} = \{4, 14, 15, 16, 20, 21\}$,
$B_{60} = \{18, 21, 22, 24, 26\}$,
$B_{68} = \{14, 22, 26, 28, 30\}$,
$B_{70} = \{4, 12, 14, 15, 22, 24, 26\}$,
$B_{72} = \{6, 14, 15, 22, 26, 33\}$,
$B_{76} = \{8, 10, 24, 26, 30\}$,
$B_{78} = \{4, 8, 10, 15, 20, 21, 28\}$,
$B_{82} = \{6, 10, 12, 14, 16, 22, 26, 28, 30, 38\}$,
$B_{91} = \{28, 35\}$,
$B_{96} = \{9, 10, 14, 20, 22, 26, 28, 38, 39, 46\}$,
$B_{98} = \{6, 10, 12, 18, 20, 22, 24, 26, 28, 30, 32, 35, 38, 42, 44, 46\}$,

Related sequences in the OEIS are A138389, A178071, A178098 – A178101, A178105, A178109 and A178110 [2].

References

1. Vladimir Shevelev, *On the divisibility of* $\binom{n-i-1}{i-1}$ *by* i, Int. J. Number Theory **3** (2007), no. 1, 119–139. MR 2310496 (2008a:11024)
2. Neil J. A. Sloane, *The On-Line Encyclopedia Of Integer Sequences*, Notices Am. Math. Soc. **50** (2003), no. 8, 912–915, http://oeis.org/. MR 1992789 (2004f:11151)

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