A classification of primes in four classes using the MC function

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Abstract. In few of my previous papers I defined the MC function. In this paper I make a classification of primes in four classes using a formula involving this function, id est the formula p + MC(p + 2) - 5, where p is prime. The classification is strict, a prime can not belong simultaneously to two classes.

Introduction: In this paper I classify the primes in four classes; the criterion of classification is the value of the number N = p + MC(p + 2) - 5, where p is the namely prime.

Class I: primes p for which p + MC(p + 2) - 5 = p.

: 3 + MC(5) - 5 = 3;
: 7 + MC(9) - 5 = 7;
: 19 + MC(19) - 5 = 19;
: 23 + MC(23) - 5 = 23;
: 43 + MC(45) - 5 = 43;
: 61 + MC(63) - 5 = 67;
: 79 + MC(81) - 5 = 79;
: 83 + MC(85) - 5 = 83;
: 127 + MC(129) - 5 = 127;
: 131 + MC(133) - 5 = 131;
: 151 + MC(153) - 5 = 151;
: 167 + MC(169) - 5 = 167.

Class II: Primes p for which p + MC(p + 2) - 5 = N, where N is prime.

: 5 + MC(7) - 5 = 7;
: 11 + MC(13) - 5 = 19;
: 17 + MC(19) - 5 = 31;
: 41 + MC(43) - 5 = 79;
: 61 + MC(63) - 5 = 67;
: 71 + MC(73) - 5 = 139;
: 73 + MC(75) - 5 = 79;
: 89 + MC(91) - 5 = 103;
: 101 + MC(103) - 5 = 199;
: 107 + MC(109) - 5 = 211;
: 137 + MC(139) - 5 = 271;
: 191 + MC(193) - 5 = 379.

Class III: Primes p for which p + MC(p + 2) – 5 = p + 2, where p + 2 is not prime.

: 13 + MC(15) – 5 = 15;
: 37 + MC(39) – 5 = 39;
: 53 + MC(55) – 5 = 55;
: 97 + MC(99) – 5 = 99;
: 109 + MC(111) – 5 = 111;
: 113 + MC(115) – 5 = 115;
: 157 + MC(159) – 5 = 159;
: 173 + MC(175) – 5 = 175.

Class IV: Primes p for which p + MC(p + 2) – 5 = N, where N is composite and does not belong to the class III.

: 29 + MC(31) – 5 = 55;
: 31 + MC(33) – 5 = 39;
: 47 + MC(13) – 5 = 55;
: 59 + MC(61) – 5 = 115;
: 103 + MC(105) – 5 = 121;
: 139 + MC(141) – 5 = 147;
: 149 + MC(151) – 5 = 295;
: 163 + MC(165) – 5 = 175;
: 179 + MC(181) – 5 = 355;
: 181 + MC(183) – 5 = 187.

Note: From the first 42 odd primes, 32 belong to one of the first three classes, the "regular ones" because they are defined by a formula, and just 10 belong to the fourth class, the "irregular" one.