Some explicit upper bounds for residues of zeta functions of number fields taking into account the behavior of the prime 2

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We recall the known explicit upper bounds for the residue at $s = 1$ of the Dedekind zeta function of number fields K. Then, we improve upon these previously known upper bounds by taking into account the behavior of the prime 2 in K. We finally give several examples showing how such improvements yield better bounds on the absolute values of the discriminants of CM-fields of a given relative class number. In particular, we will obtain a 1000-fold improvement on our previous bound for the absolute values of the discriminants of the non-normal sextic CM-fields with relative class number one.