On the Consistency of P=NP with Peano Arithmetic

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We formulate the P < NP hypothesis for the satisfiability problem as a Pi-zero-two sentence out of which we can construct a partial recursive function f so that f is total if and only if P < NP. We then show that if f is total then it isn't PA-provably total. Follows that P = NP is consistent with PA. We then discuss the extension of that result to fragments of ZFC whose consistency is of ordinal order.

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