A Factor of the Fermat Number F_{19}

By Hans Riesel

On November, 16th, 1962 the author, with the aid of the computer Besk, discovered the factor $p = 33629 \cdot 2^{21} + 1 = 7\ 05251\ 24609$ of the Fermat number $F_{19} = 2^{2^{19}} + 1$, the character of which was previously unknown. The author is on spare time running a program on the Besk, which is similar to that of Robinson and Selfridge [1] for finding all factors $< 2^{38}$ in all Fermat numbers. Their limit for the factors was 2^{35}.

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1. ROBINSON, RAPHAEL M., "A report on primes of the form $k \cdot 2^n + 1$ and on factors of Fermat numbers," *Proc. Amer. Math. Soc.*, v. 9, 1958, p. 673–681.