

**ZMATH 2016f.00932**

**Reed, Cameron**

**Computing logarithms by hand.**

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Summary: How can old-fashioned tables of logarithms be computed without technology? Today, of course, no practicing mathematician, scientist, or engineer would actually use logarithms to carry out a calculation, let alone worry about deriving them from scratch. But high school students may be curious about the process. This article develops a straightforward technique for computing common logarithms by establishing a few successive square roots of 10. Because the logarithms of these values are by definition just the power to which 10 has been taken ( $1/2$ ,  $1/4$ ,  $1/8$ , etc.), these values can be used to construct a table of logarithms in which the increment in the logarithm is  $1/2^N$ , where  $N$  is the number of square roots computed. By interpolating between these accurately computed points, we can build a standard log table. This method should help reinforce rules of logarithms and powers for students. (ERIC)

*Classification:* F50 N50

*Keywords:* logarithms; numbers; mathematical concepts; interpolation

<http://www.nctm.org/Publications/Mathematics-Teacher/2016/Vol109/Issue8/Computing-Logarithms-by-Hand/>