The Windows Calculator no longer generates tiny errors when calculating the square root of a perfect square

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Raymond Chen

Some time ago, I explained why the Windows Calculator generates tiny errors when calculating the square root of a perfect square.

Good news! Square roots of perfect squares are now exact!

In fact, it's more than just square roots of perfect squares. Perfect cube roots of perfect cubes are also exact. In general, rational roots and powers of integers will come out exact if the result is an integer. For example, raising 8 to the ⅔ power will produce 4 exactly.

Getting the exact result is considerably more computationally expensive, but the calculator is not a performance-sensitive program. If calculating the ⅔ power of a number takes an extra 10 milliseconds, nobody will care.

When the Calculator team announced this change at an internal event, they wore custom-made T-shirts that said

> -1.06828
> 1969439
> $142e{-}19$

Update:

> We have extra shirts https://t.co/4FePvAX5T6
>
> — Johan Laanstra (@jplaanstra) July 4, 2018

Raymond Chen

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