Using a bunch of square roots
to change 8 to one...
or "very close" to one.

Let's put 8 on a square root diet.

$$\sqrt{8} \approx 2.828427$$

$$\sqrt{\sqrt{8}} \approx 1.681793$$

$$\sqrt{\sqrt{\sqrt{8}}} \approx 1.296839$$

$$\sqrt{\sqrt{\sqrt{\sqrt{8}}}} \approx 1.138789$$

etc.

Suppose we wish to reduce 8 all the way to one. That would take infinitely many square roots, which would wear out your calculator button. But we could satisfy the A.P. Calculus 3 decimal place accuracy. using the $\frac{1}{2}$ power for $\sqrt{\ }$, and some logarithms.

$$8^{\frac{1}{N}} < 1.001$$

$$\ln 8^{\frac{1}{N}} < 1.001$$

$$\frac{1}{N} \ln 8 < \ln 1.001$$

$$\frac{\ln 8}{\ln 1.001} < N$$

$$2080.48 < N$$

So $N = 4096 = 2^{12}$ is sufficient

To check our thoughts

$$8^{1/2^{12}} = \left(\left(8^{\frac{1}{2}}\right)^{\frac{1}{2}}\right)^{\frac{1}{2}} \cdots \text{(12 square roots)} \approx 1.0005$$

That's close enough for government work!