$$\begin{array}{r|l} 3(n_{k-2}\ n_{k-1}\ \ 1\ n_1\ n_2 \cdots & 5\ 7\ 1\ 4\ 2\ 8) \\ & 7\ 1\ 4\ 2\ 8\ 4 \\ & 7\ 1\ 4\ 2\ 8\ 4 \\ 4(n_1\ \ \ \ n_2\ n_3\ n_4\ n_5 \cdots & 4\ 2\ 8\ 5\ 7\ 1) \end{array}$$

so that *428571* is a solution to our problem.

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THE APOLLONIUS PROBLEM

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Problem 29 on page 216 of E.W. Hobson's *A Treatise on Plane Trigonometry,"* Cambridge University Press (1918) reads: "Three circles, whose radii are $a, b, c,$ touch each other externally; prove that the radii of the two circles which can be drawn to touch the three are

$$abc/[(bc+ca+ab) \pm 2\sqrt{abc(a+b+c)}]."$$

Horner [1] states "The formula...is due to Col. Beard" [2]. That the formula is incorrect is evident upon putting $a=b=c,$ whereupon the radii become $a/(3 \pm 2\sqrt{3})$, so that one of them is negative. Horner recognized this when he stated, "The negative sign gives R (absolute value)...".

The correct formula has been shown [3] to be:

$$abc/[2\sqrt{abc(a+b+c)} \pm (ab+bc+ca)].$$

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3. C.W. Trigg, "Corrected Solution to Problem 2293, *School Science and Math.,* 53 (Jan. 1953), p. 75.

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