FEEDBACK FROM OUR READERS

Two of our readers have made comments about some matters in earlier issues of Parabola

1. The first was contributed by Anand Papad of Patna in India (who also wrote the article on the digits of a number in this issue. He has sent an alternate solution to problem Q1037 in volume 34 No. 3, which asks:

   Suppose n is a positive integer and let $f(x) = \frac{x}{1+n^2x^2}$.
   Without using calculus, show that $f(x) \leq \frac{1}{2n}$.

   His answer is:

   Set $x = \frac{1}{n}\tan\theta$, then $f(x) = \dfrac{\tan\theta}{n(1+\tan^2\theta)} = \dfrac{\sin 2\theta}{2n} \leq \dfrac{1}{2n}$

   since $\sin 2\theta \leq 1$.

2. The other one was an error that Mr. George Harvey of Spence ACT noted in theorem 2 on page 22 of volume 36 No. 3. This theorem says that

   If a is an integer, then $a^{\phi(n)} = 1 \pmod{n}$.

   As Mr. Harvey rightly points out, this theorem should say that a is an integer *coprime to n*.

   In fact if a is not coprime to n, then a and n have a common factor d, which also divides both $a^{\phi(n)}$ and n. Thus $a^{\phi(n)} \neq 1 \pmod{n}$.

Ed.