Show that one can assign to every real number $x$ a sequence of integers $S_n^{(x)}$ such that if $x < y$ then $\lim_{n \to \infty} [S_n^{(y)} - S_n^{(x)}] = \infty$.

Please submit your solution to:

- Dr. Christian Avart, cavart@gsu.edu

before the deadline: November 30th, 7:00PM. The WINNER will be awarded with a $15 gift card and a certificate and will be announced in the NEXT issue.

**Solution to the October Problem of the Month**

Let $f(\theta)$ be the height of the bee when at position forming an angle of $\theta$ with the starting point. It is a continuous function, and consequently so is the function $g(\theta) = f(\theta + \pi) - f(\theta)$. We just need to show that $g$ takes on the value 0 for some $\theta$, because that would imply $f(\theta + \pi) = f(\theta)$ as desired. If $g(0) = 0$, we are done. If not, then the values of $g(0) \neq 0$ and $g(\pi) = -g(0)$ are of opposite signs. By continuity and the Intermediate Value Theorem, $g$ must take on the value 0 somewhere in between, and we are done.

**Winner: none**