Friday, February 14, 2014

Evaluate the infinite product $\displaystyle\prod_{k=1}^{\infty} \cos(x2^{-k})$.

(Note the infinite product is, by definition, the limit of the partial products

$$P_n = \prod_{k=1}^{n} \cos(x2^{-k}) = \cos(x2^{-1})\cos(x2^{-2})\cdots\cos(x2^{-n})$$

as $n \to \infty$.)

Join the competition!
The Department of Applied Mathematics and IIT SIAM Student Chapter is organizing a weekly campus-wide math competition for undergraduate students.

- ▷ Every Friday 3pm, visit `http://math.iit.edu/~weeklyproblem` to view the problem of the week
- ▷ Submit the solution to `weeklyproblem@math.iit.edu` by Wednesday 5pm
- ▷ The author(s) of the first correct solution(s) will receive a monetary prize

For more details view the official web site `http://math.iit.edu/~weeklyproblem`.

Become a Math Club member and receive problem notifications by email.

Good Luck! Have fun and enjoy Mathematics!