## Problem of the Week

Finishing date: 10/14/2015

Let $\left\{P_{n}(x)\right\}_{n \geq 0}$ be a sequence of polynomials in one variable $x$ defined by

$$
P_{0}(x)=1, \quad P_{1}(x)=x
$$

and for all integers $n \geq 2$

$$
P_{n}(x)=x P_{n-1}(x)-P_{n-2}(x) .
$$

Does there exist a common real root of

$$
P_{2016}(x)-P_{2015}(x) \text { and } \sum_{n=1}^{2015} P_{n}(x) ?
$$

## Previous problem winners:

There were no correct solutions for the previous problem.


Submit your solutions before the finishing date to the address: ProbOfTheWeek@utdallas .edu

