Cal Poly Department of Mathematics

Puzzle of the Week

Jan 16 - ~~22~~ 29, 2014

In the triangle ABC let M denote the midpoint of BC, let O denote the circumcenter, and let D denote the second point intersection of AM with the circumcircle of ABC.

Suppose we are given that $\angle BAC = 45^o$ and that $|AM| = 2|MD|$. Find $\cos(\angle AOD)$.

Slight hint: It might help to calculate the angle $\angle BOC$

Solutions should be submitted to Morgan Sherman:

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before next Thursday. Those with correct and complete solutions will have their names listed on the puzzle's web site (see below) as well as in next week's email announcement. Anybody is welcome to make a submission.

http://www.calpoly.edu/~sherman1/puzzleoftheweek