Math Problem of the Fortnight
2-3-4 Triangle

The length 3 side of a 2-3-4 triangle is extended to form a right triangle with hypotenuse 4. What is the ratio of angle $B$ to angle $A$?

The Problem of the Week is open to all undergraduate students, regardless of major. Submit your written solution, along with your name and e-mail address, to the Math Department office (Founders Hall Room 2006) by 2:00 p.m. on Friday, September 2, 2016. There is a prize of approximately $10 in value for the best solution.

http://www.unk.edu/academics/math/problem-of-the-fortnight.php

Disclaimer: Trivial solutions, although valid, run the risk of not being the best solution.