Math Problem of the Fortnight
Stones

You have a stone and a balance. Your stone weights 40 pounds and you love to use it to balance 40 lb objects. One day your neighbor stops by to borrow your stone and balance so he can weight his 40 lb stone to make sure it hasn’t shrunk. It turns out that his stone had shrunk and in his surprise he dropped your 40 lb stone and it broke into 4 pieces! But he tells you there is good news. With the 4 pieces and your balance you can now weigh any integer amount of lbs from 1 to 40 lbs. What are the sizes of the pieces that the stone broke into?

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 April 7, 2017. There is a prize of your choice of a $10 gift certificate to either Komal or Barista’s for the best solution.

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