
Problem of the Week

Number Six

March 14, 2016

We need to get back into the swing of things after the long break. So let's just unload a bunch of math puns:

What's purple and commutes? An Abelian grape!

What's yellow and equivalent to the axiom of choice? Zorn's lemon!

How many molecules are in a bowl of guacamole? Avocado's number!

Why should the number 288 never be mentioned? Because it's two gross!

What is normed, complete, and yellow? A Bananach space!

What's a polar bear? It's a rectangular bear after a coordinate transformation!

Why didn't Newton discover group theory? Because he wasn't Abel!

What do you get when you divide the circumference of a jack-o'-lantern by its diameter? Pumpkin pi!

What do organic mathematicians throw into their fireplaces? Natural logs!

What do you get when you set off a bomb in a kitchen? Linoleum blown apart!

That last one isn't a math joke, but I like it. Let's get to this week's problem. Keep in mind that an expression of the form a^{b^c} should be understood to mean $a^{(b^c)}$.

There are eight numbers that can be made with four two's and no other symbols. Here they are:

$$\begin{array}{cccc} 2222 & 222^2 & 22^{22} & 2^{222} \\ 22^{2^2} & 2^{22^2} & 2^{2^{22}} & 2^{2^{2^2}} \end{array}$$

Which is the largest of these numbers?

When you think you have the problem figured out, follow the instructions below.

*Submissions are due to Jason Rosenhouse by 5:00 on **Friday, March 18**. Solutions should be written on the back of an official POTW handout. Place your name, e-mail address, and the section numbers and professors of any math courses you are taking, in the **upper right corner** of the front of the page. One weekly winner will receive a five-dollar gift card from Starbucks. Solutions will be posted at this website, by the Monday after the problem is due:*

<http://educ.jmu.edu/~rosenhjd/POTW/Spring15.html>