Blogging for Quantitative Literacy

Kira Hamman

Penn State Mont Alto

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An online journal of sorts, with entries about practically any topic imaginable:

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- Politics
- Parenting
- Travel
- Cooking
- … learning math? Why not??

Why Use a Blog?

WHY USE A BLOG?

- Writing skills

WHY USE A BLOG?

- Writing skills

- Editing skills

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- Writing skills

- Editing skills

- Higher-order thinking

Why Use a Blog?

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- Discussion

WHY USE A BLOG?

- Writing skills

- Editing skills

- Higher-order thinking

- Discussion

- Analysis

WHY NOT USE A BLOG?

WHY NOT USE A BLOG?

OK, so, it's a lot of work.
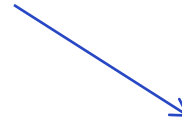
THE TRICKLE-DOWN MODEL

THE TRICKLE-DOWN MODEL

Instructor writes an entry
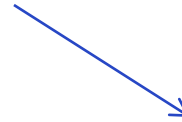
THE TRICKLE-DOWN MODEL

Instructor writes an entry

Students respond
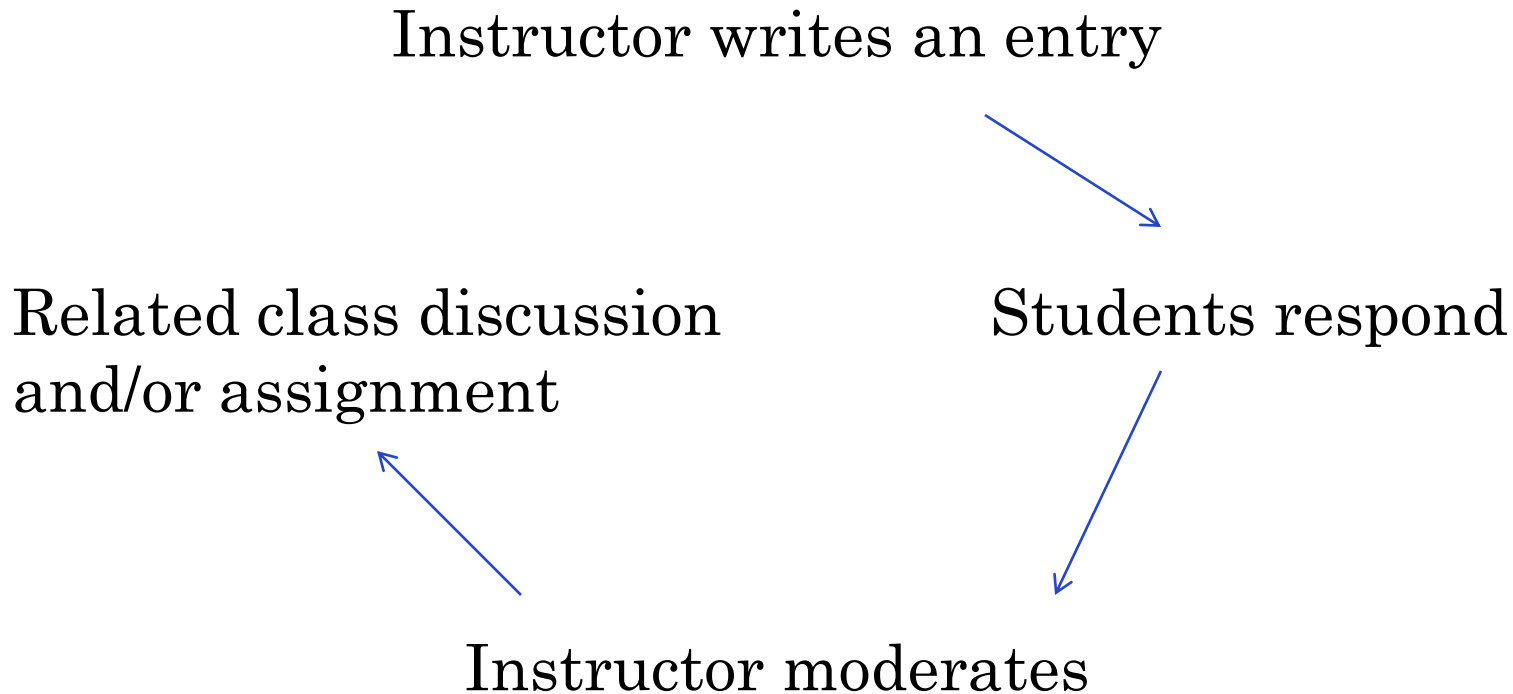
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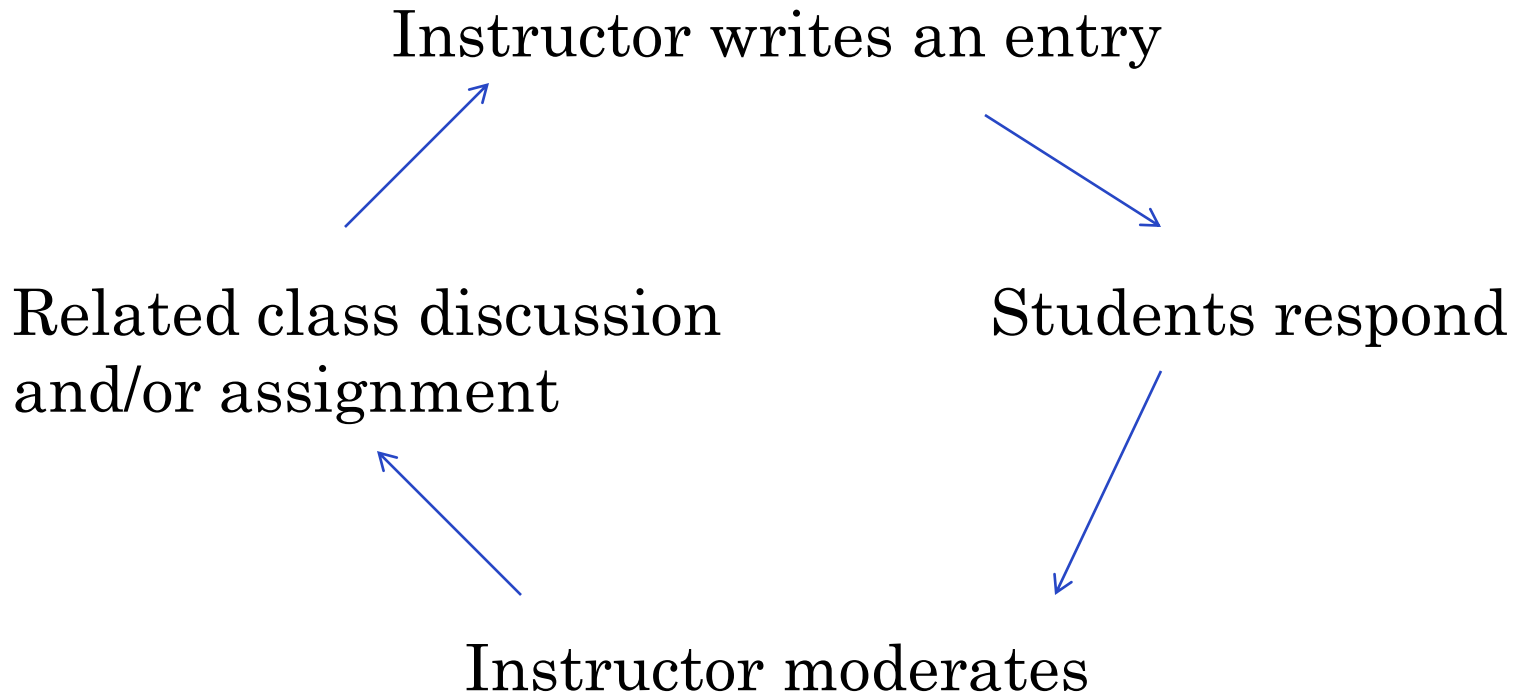
Instructor writes an entry

Students respond

Instructor moderates

THE TRICKLE-DOWN MODEL

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Related class discussion and/or assignment

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THE TRICKLE-DOWN MODEL

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- Relatively easy to grade

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- Students do some writing

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- Students are only responsible for responding, not for creating

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- Relatively easy to grade
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- Students do no moderating
- Students are only responsible for responding, not for creating
- Potential for a lot of student interaction
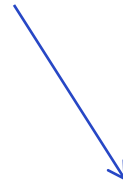
The you're on your own model

THE YOU'RE ON YOUR OWN MODEL

Each student writes on his/her own site

THE YOU'RE ON YOUR OWN MODEL

Each student writes on his/her own site

Instructor and/or
other students respond

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other students respond

Student moderates

THE YOU'RE ON YOUR OWN MODEL

Each student writes on his/her own site

Class discussion and/or assignment

Instructor and/or other students respond

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- Very easy to grade

THE YOU'RE ON YOUR OWN MODEL

- A little less easy to implement
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- Students do a lot of writing

THE YOU'RE ON YOUR OWN MODEL

- A little less easy to implement
- Very easy to grade
- Students do a lot of writing
- Students do all the moderating, although there may not be much to do

The you're on your own model

- A little less easy to implement
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- Students are responsible for creating content themselves

THE YOU'RE ON YOUR OWN MODEL

- A little less easy to implement
- Very easy to grade
- Students do a lot of writing
- Students do all the moderating, although there may not be much to do
- Students are responsible for creating content themselves
- Not much student interaction
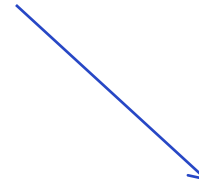
THE MASS CHAOS MODEL

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Students take turns
writing entries on the same site

THE MASS CHAOS MODEL

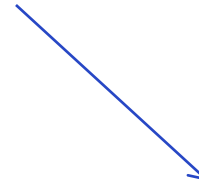Students take turns
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Other students respond

THE MASS CHAOS MODEL

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Other students respond

Writer moderates

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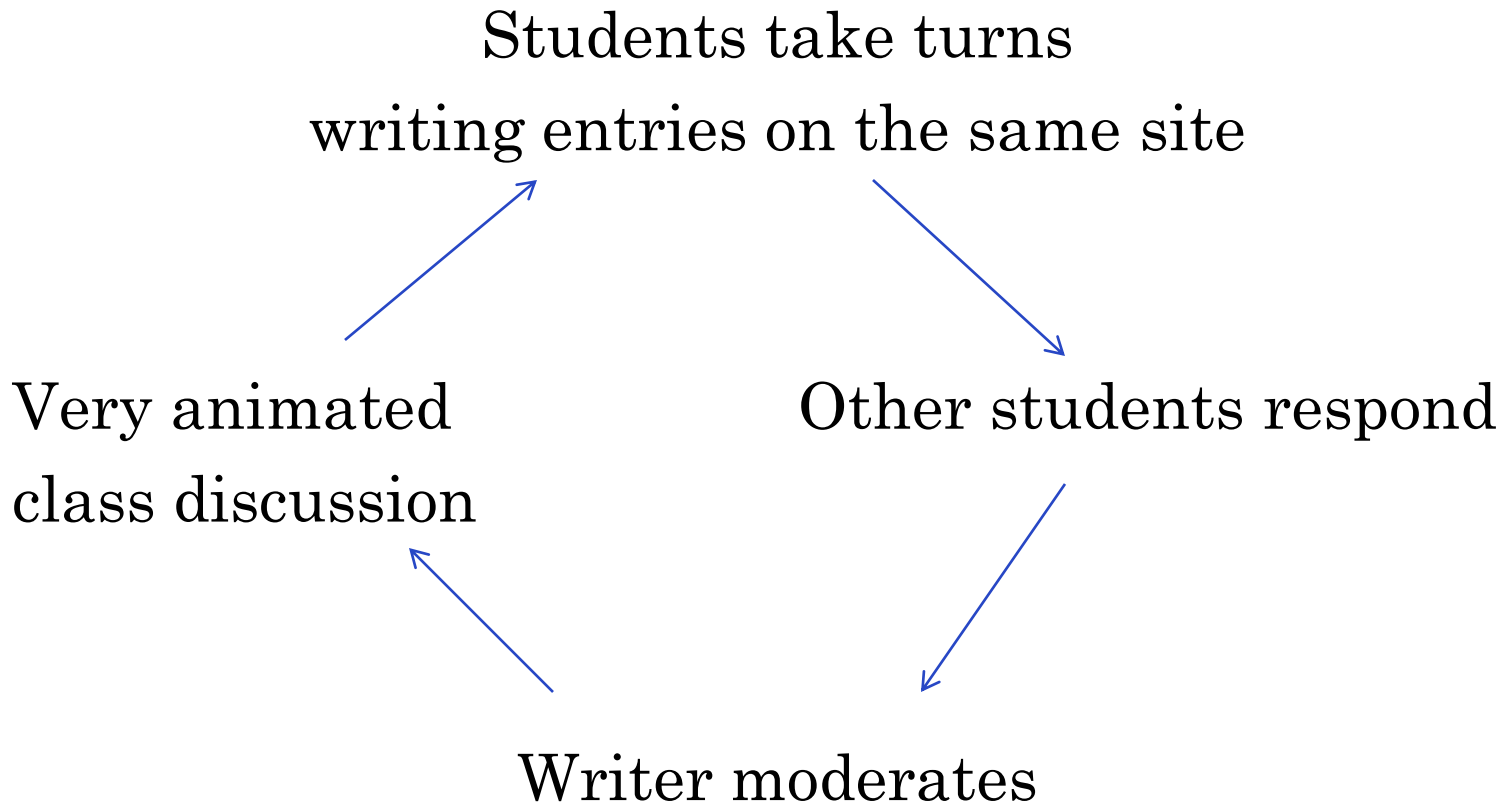writing entries on the same site

Very animated
class discussion

Other students respond

Writer moderates

THE MASS CHAOS MODEL

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- Complicated to implement
- Nearly impossible to grade

The mass chaos model

- Complicated to implement
- Nearly impossible to grade
- Students do all the writing

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- Students do all the writing
- Students do all the moderating, and there is a lot

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- Students are responsible for creating content themselves
- Tons of student interaction
- Total chaos
- … but so fun!

Mathematics and Democracy

Musings on the mathematics behind the issues of the day by MATH 017 at Penn State M

Sunday, October 16, 2011

Can Medicare Be Sustained?

It seems like every government program is on the chopping block these days and Medicare is no exception. Now most of us are young enough that we probably aren't even thinking about Medicare yet. Perhaps we should be. Like most programs, it is facing troubled times. Since it's creation in 1965, Medicare's favorable ratings have risen; making it the most popular government program ever started. With such popularity, it's no wonder proposed cuts to Medicare can spark a heated debate. Currently, there are 50 million people on Medicare, with a new person becoming eligible for the program every 8 seconds. Medicare costs the nation $555 billion annually, almost 15% of our nation's annual budget. The current aging Baby Boom generation will add an additional 1.6 million people to Medicare over the next 20 years. By the year 2030, Medicare will have 81 million people eligible. By 2086, over 120 million will be on Medicare and the program will be paying out close to $31 trillion to it's eligible members. With such astounding numbers, it's no wonder that our government recommends that the program be trimmed down. But, can we save money and still keep Medicare for future generations?

A recent article in USA Today, states that there are five areas of reduction suggested by law makers. First suggestion would be to target the rich. Basically put, raising premiums and limiting benefits for the wealthy. Just last year, the Medicare tax was raised for individuals making $200,000 and couples making $250,000 annually. Now it is recommended that we target those with an income of $85,000+ annually. However, this group already pays higher co-pays and prescription drug prices. A second option would be to increase beneficiaries' costs. This would mean new Medicare recipients would pay higher co-pays and deductibles. This plan would costs Medicare beneficiaries $6,400 per year. A third option would be to raise the eligibility age. Currently, the Medicare eligible age is 65, but President

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Tuesday, October 11, 2011

"Energy Rich Nation" or "Energy Poor Nation"

Mitt Romney has been arguing that the United States is an "energy rich nation" that is "living like an energy poor nation" There are so many Americans that think we as a nation do not have enough energy to go around. Gas prices are skyrocket and do we really have enough energy to last us long term?

In 2009, the Congressional Research Service produced a report analyzing the total fossil fuel stores available to the United States compared with other countries. It concluded that the United States has an embarrassment of energy riches. In fact, when the analysts converted all of our oil, natural gas and coal reserves into barrel of oil equivalents, the United States edged out Russia as the world's most-energy-rich nation. The United States has three times the fossil-fuel stores of Iran and Saudi Arabia, and more than seven times as much as Iraq, when expressed as barrel of oil.

The article also discussed how difficult it is to compare the reserves of different countries. There is no standardized inventory system it is a bit of an educated guess. Also 93% of the U.S. fossil-fuel supply is in the form of coal. We have so much coal in the US that we could continue our consumption for 250 years. But coal is a challenging fossil fuel to extract.

On another note our oil reserves only have 21.3 billion barrels of proved reserves. That may seem like a whole lot but in reality it would only last us about eight years' worth of consumption. This is a constant shift number because; a rise in the market price of oil can make previously uneconomic reserves suddenly worth pursuing.

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Mathematics and Democracy

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Monday, September 26, 2011

Obama's New Tax Proposal: Rebuilding The Economy?

In the article "Obama tees up a clashon taxes," published by *The Washington Post*, Readers get a more in-depth view on President Obama's new proposal to provide $3 trillion budget savings over a decade. While I was looking through different articles, I was particularly interested in this article because this is an ongoing issue in the United States, and our nation's federal debt is consistently an issue and affects all of our lives. I felt this article did a great job in simplifying what can be a very complicated concept to understand and what the President's intentions and goals are at this time.

In summary, the article focuses on President Obama's trying to slow to the nation's rocketing federal debt. He is calling for a proposal that $1.5 trillion in new revenue will be established as well as finding more than $3 trillion in budget cut savings over the next decade. He plans to do this by a new tax on the wealthy, commonly referred to as the new millionaire tax. He also focuses on the importance that Medicare benefits will not be reduced until 2017. Obama is proposing a bill in health-care savings that will save about $320 billion and will not affect the Medicare eligibility age that was talked about before. In summary Obama made the statement that "2010 is going to offer a clearer contrast than I think we've ever seen before"

The main point to this article is the millionaire tax increase that will affect the top 3% of Americans who possess the most financial income in the U.S. This idea is commonly referred to as the "Buffet Rule," which is in reference to Warren Buffet. Warren Buffet makes most of his income from investment profits but he states that he believes that the Government should be taxing him more than he is currently being taxed. The majority of the top 3% of Americans make the majority of their income from investment profits as well. These profits are commonly only taxed 15% compared with the top taxpayer bracket of 35% of the wealthiest citizens. The main goal Obama is trying to produce

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Mathematics and Democracy

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Monday, October 10, 2011

Three Trillion Seconds is the Average Time of Human Evolution

We always hear the expression that there is not enough time in a day, but exactly how many seconds does it take to complete average daily tasks? As our homework task we decided to take on this challenge and try to put into perspective how many seconds is three trillion seconds. Three trillion is by far a huge number so we set up a table to put a hundred to three trillion seconds in perspective. Here's what we came up with below:

- 100 seconds (1 min 40 secs)- average time it takes to cook a hot pocket.

- 1000 seconds (16 mins 40 secs)-average time it takes to run two miles (Army time averages).

- 10,000 seconds (166 mins 40 secs or 2.7 hours)-average time to watch Harry Potter and the Sorcerer's Stone.

Mathematics and Democracy

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Monday, October 10, 2011

Three Trillion Cheerios, A Little More Than the Empire State Building

We figured out that 1 box of Cheerios contains 5,200 Cheerios.
The dimensions of a box of Cheerios are 40cm x30cm x 5cm.
To find the volume we multiplied length x width x height.
The volume of a box of Cheerios is 6,000cm.

www.mathematicsanddemocracy.blogspot.com/2011/10/thats-lot-of-burgers.html

Mathematics and Democracy

Musings on the mathematics behind the issues of the day by MATH 017 at Penn State M

Monday, October 10, 2011

That's a lot of burgers...

Eric and I used hamburgers for this week's blog post. I went to a local Wal-Mart to find the biggest case of hamburgers and the case I came upon contain 32 hamburgers. To use an easier figure, we figured we should use the case, so the rest of the figures will actually be calculating three trillion cases, which contain 32 hamburgers per case (a whopping ~93 billion cases are required to hold 3 trillion hamburgers). The case's dimensions were 10" x 10" x 4", which totals to 400 cubic inches or .23 cubic feet.

Cases of hamburgers typically arrive on pallets/skids to grocery stores. Typical dimensions of a pallet as set by the Grocery Manufacturer's Association is 48" x 40" x 60", which totals to 115,200 cubic

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The Sacajawea
meant to re

Social Security
budget

THINGS TO CONSIDER

Things to Consider

- Where do you want your blog to live?

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- Where do you want your blog to live?
- What privileges do you want students to have?

THINGS TO CONSIDER

- Where do you want your blog to live?
- What privileges do you want students to have?
- What kind of commenting do you want to allow?

THINGS TO CONSIDER

- Where do you want your blog to live?
- What privileges do you want students to have?
- What kind of commenting do you want to allow?
- Who else do you want to be able to see it?

THINGS TO CONSIDER

- Where do you want your blog to live?
- What privileges do you want students to have?
- What kind of commenting do you want to allow?
- Who else do you want to be able to see it?

- How are you going to grade it???

THE ASSIGNMENT

Your Post

You will be personally responsible for one blog post this semester. To do your post:

- Find an article with mathematical content that interests you
- Write an analysis of the article (writing counts!)
- Write a bibliographic citation for the article (MLA and APA are both acceptable forms, Google them if you don't know how to use them)
- Post your analysis and your article on the blog by your deadline (deadlines are on Monday of each week)
- Respond thoughtfully to comments other students post about your entry

THE ASSIGNMENT

Your Post

Your blog post is worth 40 points, which will be calculated as follows:

- 20 points for the post itself. This grade takes into account your choice of article, your analysis, your writing, and the citation.

- 20 points for your responses to comments. This grade takes into account the thoughtfulness of your responses (see comments section below) and the number of comments to which you respond. You do not have to respond to every comment, but you should read them all and when someone makes a good point you should acknowledge and address it.

THE ASSIGNMENT

Commenting

When it is not your week to post (i.e. most of the semester), you will be responsible for commenting on other people's posts, as follows:

- You must post at least two comments each week, on two different days.
- When you post a comment, you must either be signed in or type your name in on your comment. Otherwise I can't give you credit for it!
- Comments must be polite and thoughtful. However, it is fine to disagree! Just don't be mean or rude.
- If you post more than two comments in a given week, I will grade you on the best two. That's right, you are being graded on this!

THE ASSIGNMENT

Commenting

Each comment you post is worth 3 points, which will be calculated as follows:

THE ASSIGNMENT

Commenting

Each comment you post is worth 3 points, which will be calculated as follows:

- 0 points means you didn't post anything.

THE ASSIGNMENT

Commenting

Each comment you post is worth 3 points, which will be calculated as follows:

- 1 point means you posted something, but it was really lame. For example, "Yeah," or, "That's not true," are lame comments.

The Assignment

Commenting

Each comment you post is worth 3 points, which will be calculated as follows:

- 2 points means you posted something that was decent, but not fully thought out. For example, "I agree that unemployment is a problem. My uncle Joe is unemployed, and he says it's impossible to find a job." You have given a reason for your position, but it's not a very convincing one. Your uncle Joe is probably not representative of the entire country's unemployed population.

THE ASSIGNMENT

Commenting

Each comment you post is worth 3 points, which will be calculated as follows:

- 3 points means you posted a thoughtful, well-written comment. For example, "I agree that unemployment is a problem. In Pennsylvania, over 9% of the population is unemployed, and that number may be even higher if we count part-time workers who would like to be employed full-time, for example."

THE ASSIGNMENT

Commenting

Each comment you post is worth 3 points, which will be calculated as follows:

- -1 point means you posted something unkind or inappropriate, like a personal attack or an ad for Viagra. Don't do it.
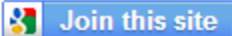
Infinite Thoughts

FRIDAY, SEPTEMBER 30, 2011

How far can we go?

As of last class, "infinite" is no longer enough to describe any set fully. While we had $\mathbb{R}$, $\mathbb{N}$, and many other infinite sets, these only comprised two distinct sizes of infinity. In order to find a new size of infinity, we had to prove that there existed an infinite set from which no 1:1 correspondence could be formed with either $\mathbb{R}$ or $\mathbb{N}$. Instead of just testing sets though, which wouldn't be very practical, we tried finding a function that could take any infinite set and, from it, produce an infinite set of higher cardinality. To do this, we considered the power set of a given set, which is a set consisting of every possible subset of the original set. And lo and behold, it worked! We proved that with any set, finite or infinite, its power set is larger than it is. We can then repeat this as many times as we want on the resulting power sets, yielding a new size of infinity each time, leaving us with many, many of sizes of infinity. However, we still cannot classify the number of sizes of infinity properly yet. As far as we know right now, it is countable, but we may yet prove otherwise.

Posted by Julian at 9:01 AM

M B t f g⁺ +1 Recommend this on Google

BLOG ARCHIVE

Reply

Catherine Shelton October 8, 2011 11:54 AM

Great summary Julian, and thanks again for using the word "countable" :)

Yaa: A link that might help clarify this:
http://www.mathacademy.com/pr/minitext/infinity/
I think it gives a good summary of what we have learned thus far.

I think if we can create a Power Set in which the size is always going to be bigger than it's original/or previous set; then those words lends itself to sound like a sequence. Not just any sequence but an infinite sequence. I think the argument over the "n+1"th term is upon us...

Reply

Yumiko Take October 9, 2011 3:41 PM

In class power sets made sense, but now i'm lost. If there are bigger and smaller infinite sets then my mind dismisses it as no longer infinite.

Reply

Catherine Shelton October 10, 2011 10:16 PM

Not my post, but all too curious as to what the very LAST link in google would give me: this was the second to last.....Apologies to prof. Hamman but I had to do it: "An infinite number of mathematicians walk into a bar.
The first asks the bartender for a beer.
The second asks for half a beer. The third one says he wants a fourth of a beer.
The bartender interrupts, puts two beers on the bar and says:
"You guys need to learn your limits." "

RESOURCES

- Blogger – www.blogger.com

- WordPress – wordpress.com

- Mathematics and Democracy – mathematicsanddemocracy.blogspot.com

- Infinite Thoughts – hpinfinity.blogspot.com

- Me – kira@psu.edu