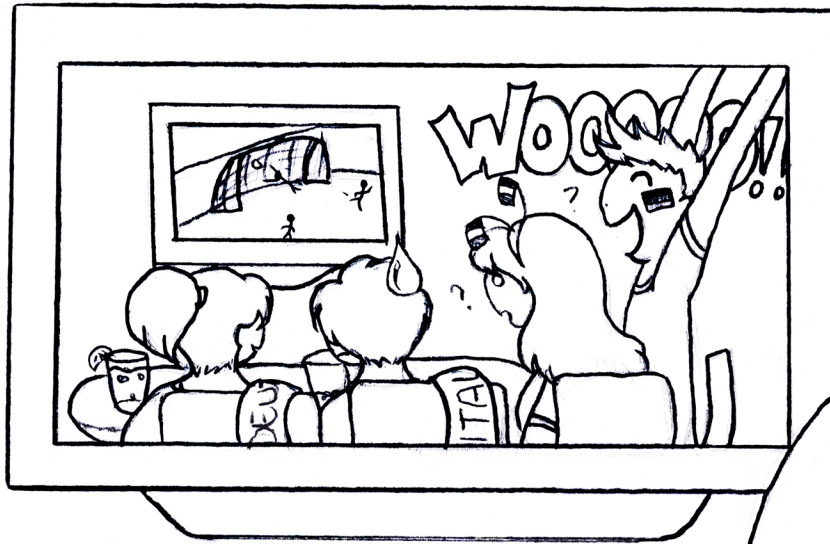


math NEWS

Volume 119, Issue 4

Friday, June 29th, 2012



Forget the UEFA Cup...

I'm cheering for

CANADA!



lookAHEAD

mathNEWS

June 29	Issue 4 finds itself in a room
July 9	Issue 5 moves north
July 13	Issue 5 is eaten by a grue

MathSoc

June 28	Pi Misapproximation Day
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IRL

June 30	Independence Day: Congo
July 1	Emancipation Day: Netherlands Antilles
July 1	Emancipation Day: Suriname
July 1	Hong Kong SAR Establishment Day
July 1	Independence Day: Burundi
July 1	Independence Day: Rwanda
July 1	Madeira Day: Madeira
July 1	Republic Day: Ghana
July 1	Republic Day: Somalia
July 2	World UFO Day
July 10	Nikola Goddamned Tesla Day
Red 5	I'm going in.
Red 10	I see them.

mineCRAFT

For anyone who plays Minecraft, *mathNEWS* is hosting a server at 129.97.134.134. To reduce the chances of it getting destroyed like last term, there is now a whitelist. To get on the whitelist, submit your minecraft username to the **BLACK BOX**. If you played on last term's server, there's a chance you've already been whitelisted.

As requested by someone who did submit their name, here are the server rules:

- Don't be a dick

Also, here's a hint for anyone submitting their name in the future. Tear off the *gridWORD* at the back of the issue, sign your name on it, and use that as the paper. That way, if nobody else submits a *gridWORD*, *mathNEWS* will give you a prize.

Concealed

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The editors: Stack (Lenny Morayniss), Queue (Murphy Berzish), List (Will Morrison)

mastHEAD

It's Canada Day this Sunday! This tends to happen at about this time every year for some reason. In contrast, this week's *mastHEAD* question is "_____ happened once, only once, in a lifetime."

Scythe Marshall("The Cubs winning the World Series! Oh wait...") Ice Nine("A shiny Bulbasaur") theSMURF("YOLO!") Concealed("the supremum of all events during the lifetime") moment("theSMURF's bloody, bloody murder for the YOLO comment. Can anyone alibi me for Sat. night?") waldo@<3.LE-GASP.ca("Meeting that ONE person and realizing that they will impact you for the rest of your life.") maplebaconburgr("Meet the Pyro!!!") Soviet Canadian("That crazy fun murder thing moment did on Saturday") Pew Pew Barney("Teaming with the smurfs to wipe out the elmos from the face of Auraxis") Sylvia MacIntyre("This moment, right now.") TehGamer("Getting a perfect match-up with a match-making system") ObjectED("Will you marry m-oh.") Zethar("Approximately nothing. As recent events show, alternate realities exist and thus there exist alternate yous leading alternate lives. To normalize this quandary, we take the life lived to be the probability function in which an event happens to the person. Under this assumption, an event happens only once if the integral over the probability space in the region which defines the unique event is equal to the reciprocal of the possible number of events over all alternate realities. Since the space of alternate realities has the same cardinality as the reals, there are uncountably many events, which means the probability of a unique event is approximately zero. It's not quite zero, because people lead mortal lives and thus are bounded on the temporal axis, which means that the number of events in a life is bounded, because the probability of all events in all realities at any given time is one. Regardless, the bounds of almost zero probability are almost zero events; thus, the natural conclusion that approximately *nothing* happens only once in a lifetime follows, *Quod Erat Denimstrandum*. Of course, the explanation presented here is merely a brief summary of a larger model about things like this—you would have learned about how to contact and tap into alternate yous in MATH352A/SCRY314, a class that's offered exactly once in all of existence.")

ScruffyED("Writing a response to this darn thing")

Infinite Pizza in a Finite Box

In an effort to reduce the cost to *mathNEWS*, I propose a simple change to the type of pizza ordered. Instead of ordering multiple traditional, flat, circular pizzas, order a single pizza in the form of a Koch surface. This fractal construction is created by starting with a single equilateral triangle, then replacing the centre with a tetrahedron. This process is then iterated infinitely on all the faces of the construction. Such a surface has the property that it has infinite surface area, but finite enclosed volume. Thus, it has space for as many combinations of toppings as we care to specify, and can be carried back in a single box.

Concealed

The Pyro? Who's that?

Mpphhh mpphh mpphhh mpphhh mhh!

If *mathNEWS* didn't mess up distribution (I'm looking at you, ObjectED [*Why do I keep printing this? -ObjectED*]), you should be reading this on the morning of Friday, June 29th 2012, and the long awaited Meet the Pyro video for TF2 should have been released by Valve. This article, written on the eve of Monday, June 25th 2012, is my precognitive reaction to the video.

- The sex scene involving the Heavy and Medic was completely unnecessary. While it was clear that there was some affection between them, this was a bit excessive.
- What was the purpose of the cameo by Geralt of Rivia? The two games are in completely different settings and universes, and it did not make much sense. Nevertheless, he was an awesome character as usual, and watching him kill the Scout and reclaiming his medallion was extremely satisfying.
- After decades of fighting, it's great to see that peace has been made between the two factions through the power of rekindled friendship between the Soldier and the Demoman. However, it does beg the question of what the game will be about after the update.
- I never knew that the Spy was such a good rapper. His trip-let with his once sworn enemies, the Engie and the Sniper, had me in tears. Such beautiful words, and such beautiful rhymes.
- Finally, the anticipated unmasking of the Pyro was very underwhelming. I mean really, Kenny from South Park? It explains the inability to speak, but not much else. What the hell Valve? Also, isn't that a trademark infringement?

theSMURF

while(hasMoney)buyFireworks();

There are very few pieces of information that are widely accepted as fact within our society. One of these absolute truths is the fact that explosions are cool. Not when you are in them, mind you, but in the majority of other scenarios involving explosions, they can only be described as "awesome". Why then, is the sale of fireworks so regulated? Maybe it is really for our own good. If fireworks were sold freely, nobody would ever get anything done, since it is much more exciting to explode the sky than it is to row reduce matrices.

Perhaps, however, the restrictions on fireworks are much more sinister! Why would our government want to limit our fun? Why is such an awesome activity only allowed on specified days? WHAT ARE THEY PLANNING? It is impossible to tell, but there does exist one obvious solution: buy as many fireworks as possible while you still can! Only you can spread joy across the world through the power of explosions! Only you can save the world from having 363 boring days a year! Sure if you really do buy all the fireworks you can, you won't have any money, but what is more important? Do you want money, or do you want happiness?

maplebaconburgr

Lament of an Eroticist

In a world where video pornography is available on demand, and legions of amateur writers exist to titillate even the most perverse of tastes, I often have friends ask, "Lisa, why do you still insist on writing erotica?"

An honest question; indeed, something I wonder myself. My first experience with erotica was Anne Rice, and it seems amusing now that I think of where that strain led to: *Twilight*, and now *50 Shades of Grey*. It reminds me that there still is a market for erotica in the popular literature market, despite harlequin romances going by the wayside. However, it seem to me that they are beasts of marketing, not of any quality. The notion of literary erotica seems to have vanished altogether: good writing and stuff that makes one randy are not often found together.

And I understand why friends would ask why I continue to write, it's not going to be widely accepted in morally upright society. This would seem to be problematic, but I know of a magazine that was published in London in 1879, full of erotic short stories, serials, limericks, sonnets and other creative works. The editors and authors of that were able to speak their minds even in as repressive of a society of Victorian England, so if I can't take pride in my work in the age of open sexuality, that seems rather cowardly.

Why I do it, though: that's rather obvious. I enjoy it, crafting words that will sensually affect the reader so much that they will be drawn into an ecstasy, writing down my darkest and deepest fantasies, and then making a little money off of it? What could be more fun?

I still worry that good quality erotica will fall by the wayside from time to time in our overtly pornographic culture, but then, if people are enjoying themselves, that's its own reward.

Stages of Lunch

Here are the stages many co-op students go through when the inevitable happens: deciding whether or not to pack a lunch.

- Denial. "I'm going to bring a lunch every day, or at least most days. It's easy to make a small lunch and I won't have to buy anything."
- Anger. "It's my coworkers' fault for continually tempting me!"
- Bargaining. "If I buy lunch today, I promise I'll bring one the rest of this week."
- Depression. "I have no money, I can't afford buying food this much and I won't be able to pay for school."
- Acceptance. "There's no way I'm going to bring a lunch. It's not going to happen, so I may as well enjoy the food I buy!"

Yours in hunger,
Shay Blair.

The *mathNEWS* Sports Report! #4

Hello again, and welcome to the fourth edition of the *mathNEWS* Sports Report, this time with convenient subheadings for maximum ease of skimming! Because apparently, some people don't like ALL the sports, and only wish to read about one of them. Heresy! Here's what you 'need' to know (but for which you would probably lose your Mathie license if you did, like me):

Baseball

Almost halfway through the season, we note that the Toronto Blue Jays now have a starting rotation of Ricky Romero, Henderson Alvarez, the ghost of Brett Cecil, and two minor league pitchers*, which is a far cry from what we expected at the beginning of the season. Health is important! Jose Bautista remembered how to mash baseballs like a mafia member (cf. <http://www.youtube.com/watch?v=wrJUWXG-7xA>), and Colby Rasmus is reborn! It's not Rasmus, it's Raster! (You know, like Easter, but with Colby Rasmus? No? Anybody? Maybe this was in bad taste...) Around the rest of the league, the trade wire is heating up, with Boston's Kevin Youkilis off to the Chicago White Sox for Zach Stewart and Brent Lillibridge. We'll see if the Phillies panic and trade Cliff Lee, he of the zero wins through June 25th (lololol pitching wins). The All-Star Game is July 10th, in Kansas City! At least the stadium is nice. Speaking of spectacles, Bryce Harper and Mike Trout are still lighting it up, but the Diamondback's star prospect, Trevor Bauer, made his professional debut last night. Bauer is one of the guys who throws a baseball from foul pole to foul pole. Yes, indeed: <http://www.youtube.com/watch?v=080GUPWRrDg>

*2:15 am Tuesday morning update: Apparently the Jays are planning to use Scott Richmond in a starting role following Alvarez's apparent elbow injury, and they have signed, of all the starting pitchers still somewhat active in the major leagues, the 49-year-old Jamie Moyer. He will report to the Las Vegas 51s. Here's hoping he makes at least one start with the Jays, with Omar Vizquel as the starting shortstop; some basic arithmetic shows that $49+45=94$ years between Moyer and Vizquel, and could allow the Jays to have an impromptu 80's day, where instead of pretending to be from the 80's, they just have Moyer and Vizquel play.

Soccer (aka. Football!)

The final of the Euro Cup is this Sunday! At the time of writing, the participants in the final have not been determined, so this is really just letting you know to watch it, regardless of who's actually playing. (Forza Azzurri! :D Your writer happens to be half-Italian, so he's hoping beyond hope that Italy beats Germany; this probably won't happen. Oh well.)

Hockey

We have entered the off-season! The NHL Awards occurred a while back, with Evgeni Malkin winning all three of the Hart, Lindsay, and Art Ross trophies; not a bad haul. This year's draft happened last Friday and Saturday, with Nail Yakupov predictably going first overall to the Edmonton Oilers. The Oilers are

now stacked up front, and are projected to contend... in 2016, when they maybe have a goaltender. There were two major highlights in terms of trades: the Penguins made a splash on Friday by trading Jordan Staal to the Carolina Hurricanes in exchange for Brandon Sutter, Brian Demoulin, and the Hurricanes' 8th overall draft pick, which ended up being Derrick Pouliot. This puts three of the four Staal brothers, Eric, Jordan, and Jared in the same system, the last of whom is still in the minors; Marc still plays for the New York Rangers. The Toronto Maple Leafs traded Luke Schenn to the Philadelphia Flyers straight-up for James van Riemsdyck, which coincidentally places Luke on the same team as his younger brother Braydon. Inductions for the Hockey Hall of Fame happened this past Tuesday, when at least "Burnaby" Joe Sakic and Brendan Shanahan were elected to the Hall. Other first-time eligible players were Mats Sundin, Jeremy Roenick, and Curtis Joseph, and holdovers included Pavel Bure, amongst others. *mathNEWS* makes no attempt to predict the future. Sometimes.

Other

Wimbledon started on Monday; notable ridiculously early upsets include Venus Williams, and perhaps John Isner (he of the 'longest tennis match in history' fame). There are probably other sporting events about which I'm forgetting, but oh well.

Don't forget to read the *mastHEAD* for a funny (perhaps) baseball joke,

Scythe Marshall

N Things I Learned During Spring Term

This is my first spring term in Waterloo, and these are just some random things I've noticed:

- Baby geese are super-cute! Until they grow up and become the big, annoying adult geese, that is.
- There are more geese than people on campus. (Of course this is an exaggeration, but given the number of baby geese I've seen, it doesn't seem like much of one.)
- Buildings with air-conditioning are wonderful places to study/sit/waste time on those unbearably hot days.
- It really sucks when you go home after spending a day in an air-conditioned building, only to realize that it's even hotter in your apartment than it is outside.
- People who go to different schools don't realize just how lucky they are to be able to spend their summer relaxing (or in general, just not being in school).
- Just because the weather is nice doesn't mean that you should be outside enjoying it instead of studying for midterms. Midterms will screw you over.
- Even though it's summer, the number of school-related (and possibly non-school-related) things to do does not decrease.

Enjoy the remainder of the term, mathies!

Sylvia MacIntyre

Interpreting the “Average Math Student”

Pondering the meaning after attending a very interesting meeting is ponderous.

In order to define an “average math student”, one must first define what “average” and “math student” mean. For the purposes of this article and the publication’s audience, we will define “math student” to be a person studying Undergraduate level mathematics in the Faculty of Mathematics at the University of Waterloo in pursuit of a degree. As for “average”, here’s where things can get complicated. For the moment, we shall take the term “average” and interpret it from an academic standpoint. Now obviously, students in this great faculty got here through merit and a good academic performance in high school. Our professors frequently tell us, “you are smart enough that you got accepted here”. For the purposes of judging our “average”, we shall ignore the high school background as university often requires a student to re-learn how to study for this academic level.

In this Math Faculty, the minimum average you have to have by the time you graduate is 60% based on all the grades you have achieved in the math courses you have taken. Now obviously each program has a different major average that you need to meet in order to achieve that major for your degree, but for the moment let us assume that you are just pursuing a major that requires this same faculty average of 60%. What this means is people pursuing a degree will generally fall above this average grade of 60%. I consider someone who meets this average (i.e. their corresponding faculty average/major average is 60% (with about 2%-5% error)), to be the “average math student”.

This “average math student” that I have defined enjoys math to a certain degree (oh the puns....oh the puns indeed) but can often struggle to handle the course loads and the work involved. Their grades are thus lower than a stronger student as they have thus lowered their expectations. The mentality is “If I can meet the average I need to graduate, then I must be doing ok.” The reality is that this average math student is at risk. If they encounter a bad term of failure and despair, their performance will certainly take a hit and it is entirely possible that this average math student could die out if they cannot recover.

Readers, I am that average math student. I am as average as it gets (it’s ridiculous actually). I meet the minimum average I need and I am fully aware that I am at risk if I do poorly. The reality is, my mediocrity impacts me and will continue to impact me as a student. I know that academically all I am is truly average. I know I’m not the only one, but I want other math students who may consider themselves to be average to know that you need to be more aware of how your achievement of being “an average math student” will affect you in the future. Change will likely come your way, and you’ll want to know about it. You’ll likely need to adapt accordingly and start changing your habits sooner than later. For more information regarding what changes are coming and how they will affect you, contact MathSoc Council (or even better, attend the next meeting!), and/or MathSoc’s Vice President in Academics. Knowledge is still powerful stuff.

A Mediocre Kitty

Where to Arm Yourself Against Vampires

Over the past few years, the idea of a zombie apocalypse has become more and more prevalent within our culture. It seems now that every video game or movie has zombies in it somewhere, and although everyone loves a good ol’ fashioned zombie invasion, the threat of other underworldly terrors has become rather under appreciated. In most cases it is perfectly acceptable to forget about all the undead threats roaming our nights, after all nobody has time to worry about all the hostile zombies roaming their basement, but when it comes to vampires the moment you forget about them is the moment they strike. With this in mind, I present to you a definitive guide to buying vampire-killing equipment:

Rona:

Rona’s selection of vampire-killing equipment is perhaps less than vast, but they do stock all the essentials required to stop a new vampire from making a quick blood snack out of you. Rona is unique in that it stocks garlic at a very reasonable price, but its real strength is in its vast assortment of metal spikes. The issue is that metal spikes are a real grey zone in the vampire world. Some vampires die when they are stabbed in the heart with them, while others refuse to die and claim that they must be stabbed with wood. The odds are really 50/50 that a metal spike will kill a vampire, but if you are willing to take that chance, then Rona is the place for you!

The Home Depot:

When you want to kill a vampire, and have the funds to do it, The Home Depot is the only place to go! Home Depot offers all the fancy tools you could require, such as potted garlic plants, and aisles full of duct tape. The Home Depot may not offer the same quality of metal spikes that Rona has, but the rustic elegance of their wooden stakes is something most vampires will die for!

Ikea:

Ikea may not seem like the most obvious choice for defending yourself against vampires, but in reality they are the ultimate place to build yourself a survival kit. Ikea’s wooden furniture collection falls apart easily, and has plenty of very sharp corners. This means that any table or chair sitting around could easily turn into a wooden stake you can fend off a vampire with. With a room full of Ikea furniture, and a fridge full of their Swedish food, you can ultimately turn your home into a vampire deathtrap!

maplebaconburgr

Words in Rhyme

Something Edition

There once was a man from Peru
Who one day was very blue
He tried hard to find
To take off his mind
From how he was covered in goo

Something something something
RedMetal

ellesHWONNE

After my stellar success in getting pizza last issue by successfully coercing a **palantír** (way to not notice the i-acute in my copyedit), this week I looked in my great-uncle Llywelyn's library and discovered a rare copy from the first run of *mathNEWS*, back when it was called *gebóhtcræftÆRENDE* and was based in where we now call Warwickshire. Why Llywelyn would subscribe to *mathNEWS* despite not being a math person is a mystery to which nobody would know the answer, but my guess is that there wasn't really much choice in reading material in the tenth century.

While some of the earlier issues from the 960 – 980 era are probably lost to us, it is evident that little has changed in the thousand intervening years as far as the writing quality is concerned; it's still little more than some dead tree or skin with funny quotes made by mentors and some extra ink for bored learned individuals to casually peruse. I would have liked to show you some of the *profQUOTES* (called *láréowYMBESPRÆC*), but without an *Ænglisc* to English gloss, it would be difficult to show how little has changed. Instead, I shall present you a list, the format of which has already become a staple by this 991 issue, which ought to speak volumes about our paper. Hey, we're consistent and reliable – at least when the editors do their jobs carefully [*Seriously, why do I keep printing this? -ObjectED*].

Zethar

Þú mæge gehwilc anginn Wínlande dón

- Þú æftersprec hit æfterlicum gearde þín.
- Þú gá egeful land þæt næbbe hriþa Éastermónaðe innan.
- Þú téhte néahmannas þín libban Wínlande in.
- Þú néote þæt land bréowan meda.
- Þider mann namod Leifr Erikson Wínland éode, þider þú éode árest Wínlande æftersprec.
- Þú cýðe wræstlunge mid þæm néatum in Wínlande.

Lígetræsc Læwend

Submit your *profQUOTES* to the **BLACK BOX** (by the Comfy Lounge) or email them to us at mathnews@gmail.com!

Remember, this publication is just a wrapper for *profQUOTES* and we don't like to disappoint (at least, not on that front).

gridCLUES

Across

1. Committee president*
7. Perseids and Leonids to name two*
8. Channel*
11. Victim
12. Accountant*
15. Pin
17. Originally, it was the Family Computer
18. Informant*
19. Assignment
21. Outfits*
24. Drunk*
27. A failing company*

Down

1. HM01
2. Mistress
3. A syndication that's really simple
4. Aphrodite's son
5. Mark
6. Mean
7. Those who eventually die
9. Weaknesses
10. Praise
12. Prohibition
13. Far away from Kanto, Johto, Hoenn, and Sinnoh
14. One of Spider-Man's dimmest villains
15. Come before
16. Firearm
19. Tie
20. Four-door
22. Ravine
23. Ein, zwei, ...
25. Witch
26. Hit

Words in Rhyme

Canada Edition

There is currently a country in the north
Explored by the brave ones who went forth
Over the forests and hills
Having relied on their skills
Called the nation "Canada" henceforth

RedMetal



gridCOMMENTS

Skeletons in the closet come out to play...

...I had really high hopes for you all. Last issue's (and the previous issue's) *gridWORD* was supposed to be the treasure chest of *gridWORDS*. Instead, it's like food at the back of the pantry that was forgotten. In the past month, I received fewer public submissions than Stephen Harper has Cabinet members who are smarter than him (in his mind, at least). As the setter of these crosswords, it is my duty to make these puzzles difficult; as the settee, it is yours to suck it up and solve them anyway to stroke my ego.

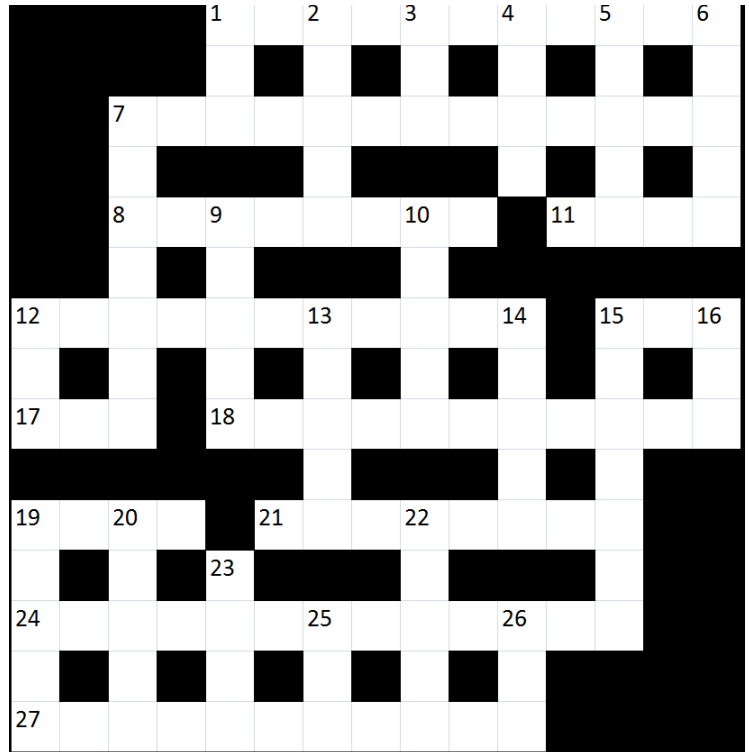
Once again, I had no submissions. Thus, the winner this week is Zethar, a fellow writer who was the only one paying attention when I said that I would declare anyone who answered the *gridQUESTION* a winner. Thank you, Zethar. When asked what he would do with the world at his feet, he replied, "You mean that the populace isn't under thrall of the grand draconic conspiracies already?" There is no grand draconic conspiracy and you should be quiet before you get us all burninated. Back benching that issue for now...

This issue's *gridQUESTION*, to be used as a tiebreaker in the case of multiple winners, is, "Allowing for time travel, who REALLY ran the Ottoman Empire?" Don't go couching your words in too much prose; submissions must be in the **BLACK BOX** (on the wall outside the Comfy Lounge) by 6:30pm, July 9, 2012, the next Production Night.

Standing high on his pedestal,
moment

Submit your completed grid to the BLACK BOX by the Comfy, and don't forget to answer the *gridQUESTION*.

This Week's Grid



Last Week's Grid

