

Volume 12, Issue 1

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Chapter 0: Notes

Renowned mathematicians Matt and Heather waited excitedly for Dan Brown’s latest novel to emerge, like a dog playing in the river. “Why can’t we be world-famous authors?” pondered Matt, staring gloomily at the vertical walls of his jocular 11’ x 11’ office that had been covered in drawings by his children, like an owl with Picasso-like tendencies.

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Our Renowned Newsletter

The Renowned Brown

Staggering through the opening sentences

Chapter 1: The Reunion

The Mathematics Department could not help but feel a deep sense of loss as they dejectedly watched another class in their black ebony gowns stride forcefully across the stage. “I wish our students would return,” thought mathematics professor Dr. Koetz of the Nazareth College Mathematics Department. “Perhaps they will come to the reunion.”

“The reunion?” asked the person sitting in the next chair. “Yes, there is a reunion every September, and the mathematics department loves to see their former pupils,” elaborated the mathematician. “Amid the festivities, we will gather on **Saturday September 16, from 11am in the morning until 2pm in the afternoon.**” “Where will this be?” the unnamed colleague queried.

Matt could picture the location in the eye of his mind. A fortress of learning.
Peckham Hall.

Amid the high ceilings and blue-green travertine tile stood the **Braveman Collaborative Center**. The gathering place for a community of student-scholars, who spent hours throughout the night absorbing knowledge. This time, they would be absorbing cookies and punch.

Chapter 2: The Preparations

Alumni Relations, bedecked in purple and gold, prepared.

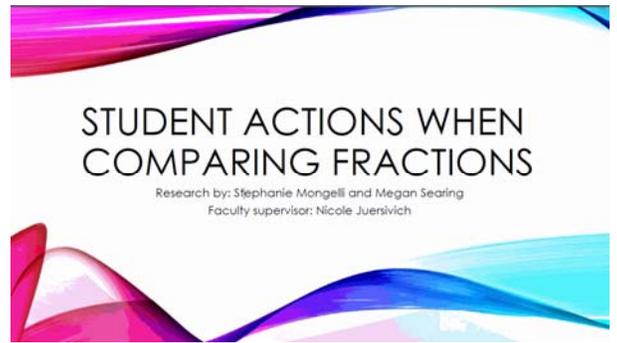


**HOMECOMING
 & REUNION**
NAZARETH COLLEGE

Chapter 3: The CARS Award

The Nazareth College Arts Center was filled with bodies striving toward academic excellence. Suddenly, without warning, the judges appeared, searching for the best presentations. Who would receive the coveted award?

There was only one answer. “Student Actions when Comparing Fractions”, presented by **Megan Searing ('18)** and **Stephanie Mongelli ('18)**, who was wearing her softball uniform after rushing straight around the corner from warm-ups.



Chapter 4: A Confession

With the looming spectre of truth floating on the floor, beloved mathematics professor Heather brazenly confessed that she had read most of Dan Brown’s novels. But that was not the most shocking revelation. A pile of receipts, fluttering in the still air, revealed that the 5 foot 4 inch teacher had not just perused, but actually owned many of the renowned author’s books.

Chapter 5: Everything Turns

“Are there any books by the notorious author that you haven’t finished?” a nameless person asked.

“When I was reading *Angels and Demons*, I came across an extraordinary claim.” Her thoughts drifted back to that day, many years ago, when renowned main character Robert Langdon uttered, “the idea that a word could be crafted into an ambigram seemed utterly impossible.” She was stunned. Ambigrams are words that defy gravity by looking the same right-side up and upside down, or tease the mind by evoking a mirror hanging in the middle of the word.



Some ambigrams even mock the notion of spelling entirely by revealing completely different words when rotated, as with this ancient ambigram from the 2016 presidential campaign.



Ambigrams, she thought to herself, while being both awesome and cool, are in fact relatively common – and also quite common. There were even websites that would generate them, such as <http://www.flipscrip.com/ambigram-generator.aspx>

Fictional Professor Langdon was wrong! The horror of it prevented her from reading any further.

Chapter 6: A Prophecy

Professor of Mathematics Matt pondered that there should a book called *Angles and Demons*, which he would gleefully read with his two blue-gray eyes.



Chapter 7: The Origins Revealed

Meanwhile, in the summer of 1908, a mysterious stranger posted an ambigram in the June issue of the English magazine *The Strand*. It read simply:



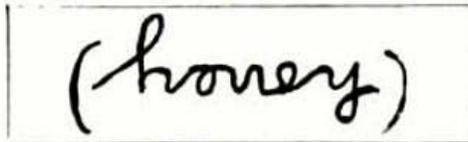
ARE THERE OTHERS?

AS you will notice, the slang word "chump," if written in the manner here shown, reads the same even when held upside down. I think it is the only word in the English language which has this peculiarity, and therefore hope you will consider it worthy of insertion in your "Curiosities" column.—Mr. Mitchell T. Lavin, 931, West Ninth Street, Cincinnati, Ohio, U.S.A.

The challenge was out — were there others? The eagle-eyed readers of *The Strand* were quick to reply:

ANOTHER "REVERSIBLE" WORD.

LAST month you gave an example of a word so written that it read the same when turned



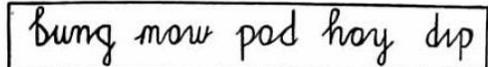
upside down. Such words are very few and far between, but I have succeeded in discovering another, for which I hope you will be able to find a corner.—Mr. V. K. Allison, Lawrenceville School, Lawrenceville, New Jersey, U.S.A.

MORE REVERSIBLE WORDS.

SENDING the reversible word "chump" among your "Curiosities," I am sending you a name, "W. H. Hill," which, when written in the style shown, reads the same when reversed. Surely this is the only name possessing so convenient a peculiarity.—Mr. B. R. Bligh, 2, Porchester Mews, Bayswater, W.

In writing the word "Bet" so that it reads the same when upside down, I have simply written the letter B twice—once with the paper inverted. Three letters and one word are thus twice repeated. Possibly B is the only letter of the alphabet that will produce such an interesting anomaly. I also send you five more examples of reversible words.—Mr. Clarence Williams, 216, Bright Street, Carbrook, Sheffield.

W.H. Hill.



These noble wordsmiths were wrong. For not only had ambigrams appeared in a 1893 book by Peter Newell, but future author Dan Brown would use them in his own novel as well.



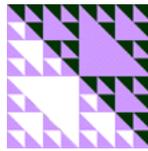
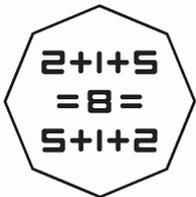
Chapter 8: Ernest William Brown

When renowned mathematician Ernest William Brown (November 29, 1866 – July 22, 1938) was born at the start of his life, he had no idea that he would share a last name with millionaire author Dan Brown. Brown reveled in computing lunar tables, accurately describing the languid motions of the Moon in multiple volumes, and had sentences written about him such as:

He was in the habit of going to bed early and as a consequence woke up between three and five o'clock in the morning. After having fortified himself with strong coffee from a thermos bottle he set to work without leaving his bed, smoking numerous cigarettes. His serious scientific work was thus done before he got up for breakfast at nine o'clock.

Chapter 9: The Sponsor

As the issue drew to a close, the editors-in-chief contemplated which number would be chosen to illuminate this issue. There were many to choose from – more than a hundred. But one stood out from all the others: the lone number 3. It was, after all, the third number (following two and one), like the third planet from the sun, and deceptively hid the digits of 12, the number of the Volume, in its sum of $3=1+2$. Was it merely coincidence that there are 7 seas and 5 oceans, and the next odd number after 7 and 5 is 3? Could anyone deny that a stool has 3 legs, or Neapolitan ice-cream 3 flavors? This number, steeped in history, in science, was the only choice. As if to confirm the crowning of this number, the number of pages, 4, stood proudly as the next consecutive integer after 3.

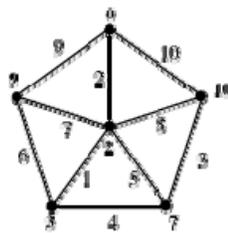


As the week fell to a close, they thought back on all the people who created the images for this newsletter: the unknown artist in Leonardo da Vinci's workshop who painted another version of the Mona Lisa in stark bright colors. The invisible internet beings who posted on Wikimedia under Creative Commons licenses. "Upside down", "Donald Trump/Hilary Clinton", and the math ambigram by Basile Morin. The rainbow colors by Douglas Hofstadter. "Ambigram" by Punya Mishra. "Matthew" by Tristan Bowersox.

Problems

Solutions to Problems 11.2

- 11.2.1: shown at right
 11.2.2: $12^3+4\times 56+7\times 8+9$,
 $98+7\times 6+5^4+3+2\times 1$
 11.2.3: two: $2+997$ and $997+2$
 11.2.4: 1



12.1.3: Only one with the arcane knowledge of a secret society could arrange the first nine numbers in the famed sequence of renowned mathematician and rabbit enthusiast Leonardo of Pisa (1, 1, 2, 3, 5, 8, 13, 21, 34) in a 3×3 grid so that sum of each row, column, and diagonal is the same. Furthermore, such a glorious arrangement can be achieved so that the sum of the products of each row is equal to the sum of the products of each column.

Problems 12.1

- 12.1.1: Surely no one has ever discerned the last digit of $1! + 2! + 3! + 4! + \dots + 100!$. Will you be the first?
- 12.1.2: Though not an ambigram, there is an 8-digit number satisfying: The number contains two 1s, two 2s, two 3s, and two 4s; the 1s are separated by 1 digit, the 2s by 2 digits, the 3s by 3 digits, and the 4s by 4 digits. What is it?

Send solutions, adjectives, renowns, alumni news, illuminati news, tennis courts, or suggestions to Heather (hlewis5@naz.edu) or Matt (mkoetz1@naz.edu).