Explanation for Math and Art Visualization Project:

1st Row: 05/08/1998 (my birthday) + 18 (my current age) = 0+5+0+8+19+98+18= 148

2nd Row: N00601682 (my NetID) + 3 (number of premature months)= 14+0+0+61+68+2+3= 148

Add 1st + 2nd row vertically, then the answers horizontally as if it were a “3rd Row”: (0+14, 5+0, 0+0, 8+61, 19+68, 98+2, 18+3 = 14, 5, 0, 69, 87, 100, 21 = 14+5+0+69+87+100+21= 296). You will get 296, which is a multiple of 148 (148 x 2 rows!) This will also occur if you add the 2nd+ 3rd row, and 3rd+ 4th row numbers vertically, and their answers horizontally

3rd Row: PALISADE (Name of the Avenue I live in, in numbers)= 16,1,12, 9, 19, 1, 4, 5= 16+1+12+91+9+14+5= 148

Add all three rows vertically, and the results of those three rows horizontally-- you will get 444, a multiple of 148 (148 x 3)

4th Row: Portion of my cell phone # + exact time I was born: (442-9028)+ 10:55= 4+42+9+0+28+10+55= 148

Add all four rows vertically, and the results horizontally, and you get 592, yet another multiple of 148 (148 x 5).

You may be asking yourself at this point-- what’s with the obsession with 148 and its multiples? It’s the number you arrive at when you convert every letter in my full name to a number (alphanumerical 1-26).

C H A R L E S A N D R E S T A

 3 8 1 18 12 5 19 1 14 4 18 5 19 20 1 = 148

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Exploring Mathematics and Art

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 Visualization Project Part 2: My Numerical Self Identity as 148

My process:

The genesis for the process of creating my Visualization project began the moment I chose to endeavour in the Self-Portrait project choice (Choice B) out of two distinctive projects I was allowed to choose from (Choice A being my own “Lengths and Tiles problem”-- which I found devoid of originality and depth). I put much thought as to how I could best express myself through numbers and started thinking of converting all the letters in my full name to a number from 1-26, using alpha numeric conversion to my advantage (as you name defines you). Writing my name down, and converting each letter to a number, I then surmised to use my birthdate, my N number, my age (18), some of my favorite numbers, and other miscellaneous numbers that happened to have a sum 18 after the addition of their individual digits (such as 1764) to create my numerical-visual representation of myself. Following this, several curious ideas traversed my mind, and it was only after I had most of my intended numbers written down that I had my first creative epiphany of sorts: due to my love for literature and poetry, it would only be proper for me to search up the Bard himself and read his 148th sonnet, in tandem with the number of my name, 148. The sonnet was at its core, the blindness of one’s reasons amidst passionate, erupting love, which I found exceedingly interesting due to my own tendency towards hopeless romanticism (don’t tell anyone). All this transpired on Sept. 21st--22nd. I shuffled this idea to the

side, and it was about a day or so later (Sept. 23-24) that my mind finally directed itself back to this project amidst other academic obligations. It was then that I had my second epiphany, in which I asked myself the profound question: Would it be possible for me to create some sort of magic square revolving around 148 out of my desired numbers, even if they were altered in some way? The task would be difficult, risky, and it would probably yield towards nothing in the end (or worse, absolute irrevocable failure). But I decided to undergo what has been already mentioned, even if the possibility of creating the square would take me my entire weekend and more. Around this time, I began to think about possibly creating an entire numerical-linguistic system revolving around base 148 (or ending at 148), and the symbols I could use to represent each number.

My Organization Principles: (Actually creating my own numerical language, and formulating my magic square, as well as designing visual representations of 148 in terms of smaller numbers, or magic matrices, if you will):

 On a piece of computer paper, I began creating my own numerical language, listing all the numbers from 1-148 in columns, and drawing small symbols next to them to represent each number. For number 1, I drew the silhouette of a bird in flight (representing individual freedom-- oneness), for number 2, I drew a half moon, for number 3, I drew three planets side by side in decreasing order, and so on, and so forth. For every tenth number, I drew a new symbol, and each number subsequently after would depict the new symbol of the initial tenth number plus one out

of the ten symbols that represented 1-9. For example, 40 was represented by a small, candle like and Pentecostal flame, while 41 was depicted by the silhouette of the bird from before next to the flame, as if to convey 40 + 1. I continued this until arriving at 148, which I represented with an ouroboros symbol (snake eating its own tail), which represents 8, plus an hourglass symbol, representing 140, making 148. I also decided to give some specific numbers in my system a third symbol that could represent these numbers in more efficient ways so as to save space, many of these numbers being divisors of 148, or multiples of 148 (to exemplify, 37 would normally be represented by Uranus, or 7, and a strange squiggly “W” shape, or 30, but could also be represented by the bust of Shakespeare above a book, representing the number of plays he is definitively believed to have written in total). Following the completion of my number system, I wrote down the rules for what to do when you had numbers beyond 148 (multiplying or compounding existing numbers together, distinguishing these operations by parentheses), and wrote down the representation of zero-- a four pointed star (1000 would be a five pointed star, 10,000 a six pointed star, and so and so forth). I had several more ideas at this time as to what other numbers I could use to expand my project and enhance its quality-- numbers such as the numerical conversion of the name of the Avenue of my address, my phone number, and even the exact time I was born (10:55 on a “dark and stormy night”). I also considered the numbers of my Enneagram typing, the numbers representing my height and weight, and the numerical conversions of the letters of my consistent Myers-Briggs Personality Type: INFP, but I ended up discarding these values for the sake of time and simplicity.

Organizing which numbers I knew I could add or incorporate into my magic square, and prioritizing those I felt fit best into the square, I took out my calculator and began adding several combinations of the numbers of my birthdate to create my first “magic row” on the quest to create a magic grid that would always add up to 148. This is what took up most of my time, and was by far the most aggravating, stressful, frustrating, and time-consuming part of my Visualization project. It was not uncommon for me to add up 05/08/1998 in ways such as 05+08+19+98 or 0+50+81+99+8 only to get numbers that were far above 148, far below 148, or just a bit too high or low (I ended up getting 149 several times with other rows and numbers. So close)! Finally, however, after hours of toil, I had finally been successful in adding the digits of my birthdate in such a way that it was able to reach 148 exactly after I added my age to the result-- 0+5+0+8+19+98+18= 148. This is when I decided to make my magic “square” into a magic “rectangle” being 7 numbers long at this point not including 148 as the answer. After this, I wrote down the symbolic representations of all the numbers I added up from the first row, referencing my made-up numerical-linguistic system, and subsequently proceeded to take another number from my list of definitive numerical constituents of my “rectangle”, and transform it into the second row of my rectangle-- this number being my N number (initially 601682 without the N or the two following zeros). In this row I struggled even more to derive 148 because I not only had to cope with a much larger number and seemingly more digits, but I also had to make sure I had seven individual numbers in total to match the seven numbers from the first row of my rectangle. After retrying and reworking my operations throughout the day and the night, I realized I could use the N and the two zeros in my N number to somehow derive 148, with N alpha-numerically representing 14 when converted to a number. I ended up, thankfully deriving 148 after I meticulously split the digits of my N number and added 14 to reach 145 with 6 numbers out of the 7 I needed (14+0+0+61+68+2). You might be asking right now why there is no zero between the 6 and 1 of my number, as it is 601682, not 61682, and begin questioning the validity of my magic rectangle in the process. But worry not, inquisitive reader! I compensated for space by adding 60 and 1 together to get 61 so as to not have 145 with seven numbers rather than 148 with seven numbers. In the last slot I added a seemingly arbitrary 3, and it may seem to you quite perplexing as to how the number 3 could possible relate to me at all-- but it does: it represents the number of months I was born premature of (I was born at merely 6 months rather than the usual 9). Like I did with the first row, I made sure to translate my 2nd row numbers into their symbolic equivalents. My third epiphany came around this time to my mind as I asked myself the possibility of somehow deriving 148 by *adding the values of the 1st and 2nd row VERTICALLY and adding those results HORIZONTALLY*. At first I thought the very idea of this was ridiculous, even if I was attempting to create a magic rectangle, but then I added the values of the 1st and 2nd row of my current rectangle and got some random numbers ranging from 0 to 100. I added these results up and, to my surprise, got 296-- a multiple of 148 (148 x 2). Once this occurred, I converted the letters in the word PALISADE (the Avenue I live on) to numerical form, combining some numbers here and there so they could add up to 148. I tried adding the three rows of numbers and got some more numbers that, this time, added up to 444 (148 x 3), not forgetting to replace every number with a symbol. Thinking I had discovered some already known mathematical property involving magic “rectangles” and such, I added the numbers of the 2nd and 3rd row vertically, and the results horizontally, and derived 296 again. Upon using part of my cell phone number (without the area code, 201), and the exact time I was born concurrently as the 4th and last row of my magic rectangle (4+42+9+0+28+10+55), I got my once again desired answer-- 148, after even more struggles. Endeavouring in the same procedures as before with the previous three rows, I added all four vertically, and their results horizontally, and derived 592 (148 x 4).

With the above in mind, I pondered about the strange, or not-so-strange “coincidences” with my answers always being 148 and a multiple of 148. If I were to be completely candid, I’d say the entire ordeal was too coincidental to not be terrifying, but upon further scrutiny I hypothesized that I might have intentionally created the magic “rectangle” I was looking for but not in such a way that I got the same answer adding individual numbers both vertically, and horizontally (*not* their sums). I theorized that because all my rows in the rectangle came up to 148 exactly, it would be reasonable for me to assume that adding the rows would yield a multiple of 148. It was really that simple. Soon after I had completed my rectangle, checked to make sure all numbers had been properly attributed to their correct symbols, revised the appearance of some symbols I thought were unattractive when displayed at a small size, added all my values again and again to ascertain the validity of the rectangle, I organized all my findings on a file on my Google Drive account, even going so far as to replicate the rectangle diagram using shapes and polygons to create the symbols I drew on paper, while also listing below that rectangle the numerical meanings of each of the symbols that I used.

At this point I asked myself where I could go from here. I had the rudiments of my project finished, revised, and meticulously scrutinized, but really nothing else I would have to do for the Visualization assignment to be considered complete. This is when the fourth epiphany I had struck my mind-- on Sunday, September 25th, and the morning hours of September 26th, 2016. Not only did I expand upon my project by converting my name to a version comprised of the symbols I used to represent my base 148 number system, which I neatly placed below the numerical translation of my “magic rectangle”, but I also thought about other ways I could possibly express 148. On the back of the same computer paper I performed all my calculations and listed the base 148 number system from before, I started drawing circles or dots, and writing the number 148 in different forms-- backwards, with zeros next to them, you name it. I spent hours trying to create a sort of visual shape with an assortment of 13 dots-- the sum of the digits of 148, and got a square, a tower-like figure, a fish, strangely enough, and even a heart. I even tried doing the same with 148 individual dots on Google Drawings, creating beautiful dot patterns large enough to color code the number 148 itself, or numerous enough to create it. I even went so far as to create a geometric star-like pattern representing each digit in the number 148-- a dot in the center of pattern represented 1, a four-pointed star surrounding it represented 4, and an eight-pointed star behind it represented 8, deriving 148.

Regarding the number 148 itself, I tried to create several matrices or “squares” that each had a different combination or alteration of the number 148 vertically *and* horizontally, making sure matching numbers did not lie next or adjacent from each other. Curiously, I always ended up with a matrix that had at least one diagonal row of numbers that were exactly the same-- numbers like 0, 1, 4, and 8 repeating diagonally, bisecting the otherwise immaculate, equilateral squares I devised. Many of these matrices also had individual alterations to the number 148 read out the same horizontally and vertically, with another alteration to 148 reading the same way but on the lower right sides of the square rather than the upper left sides. Some alterations even read vertically, horizontally, *and* diagonally. An example is shown below:

**1 4 8 1 4 8 1 4 8**

**4 8 1 4 8 1 4 8 1**

**8 1 4 8 1 4 8 1 4**

Far Left: The numbers 148 and 841 read both horizontally and vertically…

Middle-Left: The numbers 814 and 418 read both horizontally and vertically…

Right: The numbers 184 and 481 read horizontally, vertically, and diagonally, while the number 888 repeats diagonally, which is coincidentally, a multiple of 148 (148 x 6).

The above is a small, 3 x 3 example. Things started getting quite interesting when I did 4 x 4 matrices with zeros, and began playing around with several different 3 x 3 and 4 x 4 matrices, even creating a few 5 x 5 matrices or grids in which certain numbers like 418 or 184 could be read from a center numerical value outwards towards the corners and sides of these matrices while at the same time other numbers could be read side to side palindromically by row. I wrote down many of these matrices on computer paper and re-typed them on my Google Drawings files A much more complicated example is shown below:

**8 4 1 4 8**

**4 1 8 1 4**

**1 8 4 8 1**

**4 1 8 1 4**

**8 4 1 4 8**

**Red:** Pertains to 841, 148, 814, and 418 from the left side of the matrix.

**Blue:** Pertains to 841, 148, 814, and 418 from the right side of the matrix.

**Purple-pink:** Pertains to 184, and 48, as well as where red and blue numbers share the same common value vertically, horizontally, and diagonally (in the case of the uppermost row, for example, the 1 from 148 is shared by both red and blue).

Note: Notice also the repeating 8s and 1s, as well as the diagonal 4884 adjacent and next to the repeating 1s, 4s, and 8s.

 Completing my project, I pontificated at the last minute whether I should revive the idea of incorporating Shakespeare’s 148th sonnet or not, reconsidering whether to discard it or not. I’d love to create an artistic work revolving around 148 and the sonnet, possibly through a mythical creature with 1 head, 4 legs, and 8 eyes or wings, or any combination of the three numbers, but for the sake of time and my own health and energy, I will not be able to due to other assignments and preoccupations.

My Artistic and Mathematical Decisions:

 Though I have already mentioned many of the decisions I made while completing my project in the Organizational Principles section of this description of the Visualization Project, it cannot be denied that now would be the appropriate time for me to single out all the decisions themselves into this last paragraph, and lay them all out bare:

1. Whether to procrastinate on this project and prioritize my Intro Seminar and Intro Studio Curatorial Statement and Body Extension projects, each due this week, respectively (neither Mathematical nor Artistic-- both are ethical and motivational decisions).
2. What to base my entire Visualization project out of (Artistic + Mathematical).
3. Whether I should choose “Lengths and Tiles” or express my numerical identity (Artistic).
4. Whether to convert my name into numerical form (Mathematical).
5. Whether to base everything off of 148 or not (Mathematical).
6. What values to use in my project, like my birth date and time of birth, whether to use my weight and height, my numerical Myers Briggs and Enneagram personality type, or not (Mathematical).
7. Whether to use Shakespeare’s 148th sonnet in some way. (Artistic; am not able to, despite the idea being my first epiphany).
8. What symbols to use to represent each individual number (Artistic)
9. Whether to create a more Greek/Attic numerical system, or create one nearer to the Egyptians (Mathematical). My number system ended up being a mesh of both.
10. What numbers to give third symbols to, and whether to isolate every tenth number or not (Mathematical + Artistic).
11. Whether to go on past 148, or come up with a way to create numbers larger than that. (Mathematical) + Whether to create new symbols entirely or make larger numbers products of smaller numbers 148 or less (Mathematical + Artistic).
12. Which and what values to combine per row to derive 148 (Mathematical).
13. Whether to continue struggling with the calculator to make 148 at all (Mathematical, Ethical, Motivational).
14. Whether to stress out or power through the standards of the project (Motivational).
15. Whether to quit now and make the project something simpler and something not so laborious (Ethical, Motivational).
16. What symbol to give zero, and whether these zeros should be placed in one location or be spread out across each row (0508 rather than 5800) (Artistic).
17. How many numbers should be on each row, and how many rows and columns long or high the entire rectangle should be (Mathematical).
18. Whether to include the additions of rows of numbers and their results to derive multiples of 148 (Mathematical).
19. Whether to go even further at all and create dot or numerical matrices out of 148 and numbers with these exact digits but swapped and changed around. (Mathematical)
20. Whether to go technological or use multimedia, or only paper (Artistic).
21. The arrangement of the numbers in each matrix (Mathematical).
22. What shape each matrix or dot pattern should be (Artistic).
23. Whether to color code every symbol and convert my name symbolically from its numerical form or not (Artistic).
24. Whether to spend more time creating dot patterns or geometric patterns based around 148 or not-- whether to just leave the project then and there (Artistic).
25. Whether to print out all my documents and visual representations in black and white now at home, or wait until Tuesday to print them in color (Artistic, and I’ll be doing the latter anyways).
26. Whether to write a 10 page long treatise, dissertation, or a mathematical-artistic thesis statement for this project rather than just doing 2-3 paragraphs like the professor said (Artistic; it is also a tendency of mine to meticulously drone on and on in long papers).
27. Whether to include figures and diagrams in this description, and explain them to the detriment of those who listen (Artistic).
28. Whether to show rather than tell my audience on Tuesday about my project (Artistic).
29. Whether to determine if I had fun creating my own numerical self-representation or not (Motivational; and yes, I did have a lot of fun, despite the stress of other assignments and this project).
30. Whether to create something based off of Sonnet 148 or a mythical creature based around the idea of 148 in combination with the “love makes you blind to reason” motif of Shakespeare’s sonnet (Artistic; I would LOVE to, but I’ve already exhausted myself).
31. Whether to make this my last sentence and page of my project description (Artistic; and hint-hint: YES).