Introduction:

Disclaimer: Although this is called the "Dating Game", it is merely intended to help the student gain understanding of the concept of Standard Deviation. It is not intended to help students find dates.

The day after Thanksgiving, 1996, I was driving my sister, brother-in-law, and sister-in-law over to meet my brother in Springfield at the Mission where he and his wife helped out. During this drive, I ask my sister, "How do you know which woman is the right one for you?". Now, my sister was born a Jones, and like the rest of the family, she can make anything sound believable. Without missing a beat, she said, "You take the letters in her name, convert them to numbers, find the standard deviation, and whoever's standard deviation is closest to yours is the woman for you." I was so proud of my sister, that was a really good answer. Then, she followed it up with "Actually, if you can find a woman who knows what a standard deviation is, that's the woman for you."

Conversion Table

A = 1	K = 11	U = 21
B = 2	L = 12	V = 22
C = 3	M = 13	W = 23
D = 4	N = 14	X = 24
E = 5	O = 15	Y = 25
F = 6	P = 16	Z = 26
G = 7	Q = 17	
H = 8	R = 18	
I = 9	S = 19	
J = 10	T = 20	

The first part was easy, take each letter in your name and convert it to a number. Use the system where an A=1, B=2, ... Z=26.

J	A	M	E	S
10	1	13	5	19

Mean	Standard Deviation
9.6 ≈ J	6.986

Now, let's interpret the results. The mean of my name is 9.6 which rounds to 10 which corresponds to the letter J. So, the letters in my name are "centered" around the letter J. There is no conversion of the standard deviation to a letter because the standard deviation is a measure of dispersion — how spread out the letters are. It doesn't make sense (in this case) to say that my letters are G (6.986 ≈ G) letters apart. But what the standard deviation tells us is that the "average" (I use that word loosely - close to technically speaking, it is the quadratic mean of the deviations rather than the arithmetic mean of the deviations, but that's not important right now) deviation is 7 letters.

An important thing to remember is that the order of the values does not affect the standard deviation. In other words, the standard deviation of AEJMS would be the same as JAMES (but I'm really glad my parents didn't name me AEJMS).

Let's take another name. This time, we'll use the name SANDI (while not her given name, it's important to use the name the person goes by — or whichever name gives the standard deviation closest to yours)

S	A	N	D	I
19	1	14	4	9

Looking at the letters in SANDI, you find that they are very similar to the letters in JAMES. In fact, since order of the letters isn't important, let's put both names into alphabetical order to compare the differences.

A	E	J	M	S
1	5	10	13	19
1	4	9	14	19
A	D	I	N	S

Mean	Standard Deviation
9.6 ≈ J	6.986
9.4 ≈ I	7.301

You can see that the letters are very similar indeed. This is why our means are close to each other. But, her letters are a little bit further away from the mean than mine (her D is one letter less than my E and her N is one letter more than my M). For that reason, her standard deviation is a little, not much, larger than mine.

Let's take another name, BRENDA

B	R	E	N	D	A
2	18	5	14	4	1

Looking at the letters in her name, we see that the A and E are in common with the JAMES, and that the R and N are close to the S and M. However, she has a couple of other letters, D and B thrown in there. Since those letters are close to the beginning of the alphabet, her mean will be less than JAMES.

Determining the standard deviation is a bit harder, but that's really what the point of this whole exercise is. Since several of her letters are bunched closely together, they will have a small deviation, but the R and N will account for more of the total deviation. Another thing to consider with BRENDA is that there are six letters instead of the five with JAMES. This means that even though there may be more variation in her name, it may actually be less when you find the average.

A	E	J	M	S	
1	5	10	13	19	
1	2	4	5	14	18
A	B	D	E	N	R

Mean	Standard Deviation
9.6 ≈ J	6.986
7.333 ≈ G	6.976

As we see, BRENDA does have a lower mean, but her standard deviation is very similar.

Classroom Activity 2 Math 113 Name : _____
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1. Write down the letters in your preferred first name and convert them to numbers.

2. Rearrange the letters into alphabetical order and write the corresponding number under each letter. This is not necessary to find the standard deviation, but it helps visualize the name

3. Find the median letter (and value) for your name. The median letter would be the letter in the middle (if you have an odd number of letters) or the midpoint between the two middle letters (if you have an even number of letters).

4. Enter the numbers from your name into Statdisk on the computer and find the descriptive statistics. Record the mean and standard deviation below (round your answers to three decimal places).

   a. Mean =

   b. Standard Deviation =

5. Compute Pearson's index of skewness (see prob 2.5.32) for your name. Is your name symmetric, skewed to the left, or skewed to the right?

6. Write the names and standard deviations of the three people in the class with the standard deviations closest to yours.