

Vision - Potential

Vision Within Every Instructor – Potential Within Every Student

Newsletter of the HBCU College Algebra Reform Consortium*

Number 13, April 1998

Contents

- [1] Barbara Charline Jordan
- [2] Class Activity: What Do You See?
- [3] Class Activity: Cost of Gasoline
- [4] Writing Assignment: Select a Name
- [5] Query
- [6] Notices

[1] **Barbara Charline Jordan**
Freedom Medalist and Texas Treasure

Written by
Della Bell
Texas Southern University

Barbara Charline Jordan, one of Texas Southern University's (TSU) most distinguished alumna was born February 21, 1936 in Houston, Texas to B.M. and Arline Jordan. They lived in the Lyons Avenue area of Houston's Fifth Ward. Her father was a strict disciplinarian. Jordan once remarked that "she and her two sisters were raised in the strictest Baptist sense - no drinking, smoking, or dancing." Miss Jordan graduated with honors from

* Supported by the EXXON Education Foundation and the U.S. Military Academy.

Houston's Phillis Wheatley High School and attended Texas Southern University where she majored in Government and History. While baby-sitting and house-cleaning to help pay for her schooling, Jordan was involved in student government, president of Delta Sigma Theta Sorority, editor-in-chief of the yearbook, and member of the TSU Debate team. It was her involvement with the Debate Team that began for her a series of "firsts" that would become the hallmark of her professional life.

As the first woman to travel with the Debate Team, she was a member of the first team from a Black school to compete in the forensic tournament held annually at Baylor College. On that occasion, she won first place in junior oratory - one of the many first place trophies in her career as a debater. Andrew Jefferson Jr., one of Jordan's classmates at Texas Southern University stated "If there was one trait that Jordan had in those days that stood out, it was her drive to excel in everything she did." She graduated magna cum laude from TSU in 1956. She then attended the Boston University School of Law from which she graduated in 1959. She received Law Licenses from Massachusetts and Texas.

Following her graduation from law school in 1959, Barbara Jordan served as administrative assistant to the County Judge of Harris County (the first Black woman to hold that position) until her

election to the Texas Senate in 1966. She was then the first Black elected to the Senate since 1883. In 1972 she was elected President Pro Tempore of the Senate, and in the tradition of the Senate served June 10, 1972 as Governor for a Day - the first Black woman governor in the history of the United States.

It was the overwhelming mandate of the constituents of the newly created 18th Congressional District of Texas that Barbara Jordan would be their first representative in the U. S. House of Representatives. Thus, she became the first Black Texan in the U.S. Congress. She was the first Black woman from a Southern state to serve in Congress. As a member of the House, her reputation was that of a skilled politician as a “pragmatic liberal.” She served as a member of the Steering and Policy Committee of the House Democratic Caucus.

During the House Judiciary Committee hearings on Watergate, Representative Jordan, a member of that Committee, gained the attention of the nation and the world with her impassioned testimony before that body on July 25, 1974. She defined her credo in ringing memorable statements: “My faith in the Constitution is whole. It is complete. It is total. I am not going to sit here and be an idle spectator to the diminution, the subversion, the destruction of the Constitution.” Barbara Jordan worked in Congress on behalf of minorities - extending the voting Rights Act to Mexican Americans in Texas and broadening the Law Enforcement Assistance Act to prevent discrimination on the basis of race. In another significant “first,” she delivered the keynote address at the 1976 Democratic Party Convention - the first Black woman in the 144 year history of the organization. The Washington Post once described Jordan as “the first Black woman everything” - only a slight exaggeration. In mid-1979, Barbara Jordan assumed a new role as university professor, as a faculty member in the Lyndon B. Johnson School of Public Affairs at the University of Texas at Austin, where she was an esteemed and popular teacher.

She is the recipient of honorary doctorate degrees from 25 colleges and universities including Texas Southern University, Tuskegee Institute, Princeton University, and Howard University. In her lifetime, she became a national symbol and spokesperson for the principles of good government and high ethical standards in public service. She served as a strong role model for women as well as Blacks. Her constant advocacy for fairness and equality under the law remains a beacon for all Americans. In the summer of 1994, President Clinton awarded Jordan the Presidential Medal of Freedom, the highest civilian award in the land.

Barbara Jordan died on June 19, 1995 from complications of leukemia. Her Archives are located on the campus of Texas Southern University.

[2] **Class Activity: What Do You See?**

(This problem was adapted from a similar problem in the text, *Transportation Engineering and Planning*, 2nd. ed. by C.S. Papacostas and P.D. Prevedouros, Prentice Hall)

Although the saying is “Beauty is in the eye of the beholder,” a quantification of that beauty depends in part on both the size of the object being viewed and its distance from the eye. Recognition acuity is a measure of how well one sees a given object at a given distance (assuming adequate lighting and unobstructed vision). Your optometrist checks your recognition acuity by determining the smallest letter that you can recognize on an eye chart (Snellen chart) when sitting a prescribed distance from the chart. A person with normal vision (rated 20/20) can recognize a 1/3 inch high letter at 20 feet. Your vision is rated in comparison to that of a person with normal vision. If your rating is 20/50, then you see at 20 feet what a person with normal vision sees at 50 feet. Or stated another way, at a fixed distance, an object must be enlarged by a factor of 5/2 for you to see it as clearly as a person with normal vision can see the original object.

Understanding recognition acuity is important to the engineer who is designing highway signs.

(How large should the letters be in a highway sign? Why are the letters in a street sign smaller than those in an Interstate sign?)

The relation between a person's vision rating and the size (height) and distance of an object can be illustrated by a cone diagram. For example, a person with normal vision would have the following cone where H denotes the height of the object and D denotes the distance of the object from the eye.

For normal vision (20/20) with $D = 20$ feet, $H = 1/3$ inch = $1/36$ foot, the slope of the "top" edge of the cone is $\frac{H/2}{D} = 1/1440$. Therefore a person of normal vision could recognize a $1/6$ inch object at 10 feet (i.e., slope times distance = $\frac{H}{2}$). How tall an object could a normal person recognize at 25 feet?

Problems:

- If a driver with normal vision (20/20) can recognize a sign with 1.5 inch letters at 90 feet, how close to the sign would a person with 20/40 vision have to be in order to have the same recognition of the sign?
- If a driver with normal vision (20/20) can recognize a sign with 1.5 inch letters at 90 feet, how close to the sign would a person with 20/60 vision have to be in order to have the same recognition of the sign?
- Determine the height of the lettering that a person with 20/60 vision can recognize at 90 feet.

- Determine the height of the lettering that a person with 20/60 vision can recognize at 40 feet.
- How large should the letters be on an Interstate sign for a person with normal vision to recognize them at 200 yards?

[3] Small Group Activity: Cost of Gasoline

Gasoline prices have been steadily declining over the past six months. The Friday, March 20, 1998 edition of USA TODAY contained the following data on average price of a gallon of gasoline by State for the Lower 48 States.

State	Av.Price	State	Av.Price
<i>Ala.</i>	\$1.04	<i>Ariz.</i>	\$1.07
<i>Ark.</i>	\$.98	<i>Calif.</i>	\$1.11
<i>Colo.</i>	\$1.04	<i>Conn.</i>	\$1.24
<i>Del.</i>	\$1.04	<i>Fla.</i>	\$1.06
<i>Ga.</i>	\$.94	<i>Idaho</i>	\$1.14
<i>Ill.</i>	\$1.08	<i>Ind.</i>	\$.98
<i>Iowa</i>	\$1.06	<i>Kan.</i>	\$1.01
<i>Ky</i>	\$1.00	<i>La.</i>	\$1.06
<i>Maine</i>	\$1.06	<i>Md.</i>	\$1.08
<i>Mass.</i>	\$1.12	<i>Mich.</i>	\$1.05
<i>Minn.</i>	\$1.10	<i>Miss</i>	\$1.02
<i>Mo.</i>	\$.95	<i>Mont.</i>	\$1.25
<i>Neb.</i>	\$1.11	<i>Nev.</i>	\$1.16
<i>N.H.</i>	\$1.05	<i>N.J.</i>	\$.98
<i>N.M.</i>	\$1.14	<i>N.Y.</i>	\$1.16
<i>N.C.</i>	\$1.02	<i>N.D.</i>	\$1.13
<i>Ohio</i>	\$1.02	<i>Okla.</i>	\$.98
<i>Ore.</i>	\$1.14	<i>Pa.</i>	\$1.03
<i>R.I</i>	\$1.12	<i>S.C.</i>	\$.97
<i>S.D.</i>	\$1.10	<i>Tenn.</i>	\$1.10
<i>Texas</i>	\$1.01	<i>Utah</i>	\$1.09
<i>Vt.</i>	\$1.08	<i>Va.</i>	\$1.01
<i>Wash.</i>	\$1.11	<i>W.Va.</i>	\$1.08
<i>Wis.</i>	\$1.08	<i>Wyo.</i>	\$1.04

Your Tasks are to:

- a. Determine the **Average** price per gallon of gasoline in the Lower 48 States.
- b. Determine the **Median** price per gallon of gasoline in the Lower 48 States.
- c. Determine the **Mode(s)** price per gallon of gasoline in the Lower 48 States.
- d. List five businesses, industries, etc. who benefit most from a decline in gasoline prices.
- e. List five businesses, industries, etc. who are hurt by a decline in gasoline prices.
- f. Present your results and explain your reasoning for parts a-e to the class.

[4] Writing Assignment: Select a Name

You and your friends have been given permission to establish a weekend Lounge in a section of the Student Union building. Which one of the following three names would be most appropriate if you wish to draw the largest attendance?

- The Average Place
- The Mode Place
- The Median Place

Write a short essay explaining your choice.

[6] Query

(The following problem appeared in the January/February 1998 issue of *Quantum*, Volume 8, Number 3.)

John, Jim, and Gerry went to a baseball game. On the way, John bought five bags of potato chips, Jim bought two bags, and Gerry didn't buy any. During the game they all ate chips, each one eating as much as the others. After the game, Gerry

figured out how much the bags of chips cost and handed over \$1.40. How much money should John get?

[7]

Notices

1. "Mathematics and Imaging" is the focus of the Prairie View A&M University Mathematics Department Second Annual Mathematics Awareness Week Celebration, April 27, 1998-May 2, 1998. Scheduled activities will begin with an Open House, include guest speakers and seminars, and will culminate with a Secondary School Mathematics Competition and Mini-Mathematics Workshop.

The four competition categories are: Research Papers, Art, Individual, and Group.

The topics for the 5 Mini-Math Workshops are: Computer Imaging, Test Toning, Hands-on Mathematics, Mathematical Games, and The Geometry Center.

Contact Dr. Laurette Foster at P.O. Box 4189, Prairie View, TX 77446 for more details and registration forms.

2. A faculty development workshop for those who will be class testing our new textual materials next Fall will be held at Texas Southern University, June 6-8, 1998.
3. The next issue of the *Vision-Potential* Newsletter will appear in September. The Deadline for contributions to the September issue is Friday, September 4, 1998.

Please send material to Dr. Della Bell, Chair, Dept. of Mathematics, Texas Southern University, 3100 Cleburne St., Houston, TX 77004.

4. To subscribe to this Newsletter, send your name and address to Dr. Della Bell, Department of Mathematics, Texas Southern University, 3100 Cleburne St., Houston, TX. 77004