Wahpe Woyaka pi

(T a l k i n g L e a f)

South Dakota Council Teachers of Mathematics Newsletter

Presidential Ponderings

The air is getting cooler. We finally have some rain. I absolutely love the fall! After a busy summer, it is great to back in the classroom with students again. I am still wondering when I get to be one of those teachers who have their summers off. In fact, I have yet to meet a teacher who has this lifestyle.

One of the nice things about our job is that we have a definite beginning and end with our job with students. We get to start over each fall. Our students get a new beginning each year. Of course this is a double edged sword. If you always do the same thing, you are always going to get the same results. When I first started teaching many, many years ago, I remember a speaker said that we should change 10% each year. Any less you were incompetent. Ten percent isn't that much, changing one lesson plan every two weeks. If one were to do this every year, in 5 years we would have changed half of everything we do with students.

I would be one of the first on the bandwagon to say that change for change isn't effective. Unless you have a strategic plan in place of your goals, this could actually hurt students. One case I have been hearing from our members is the misuse of the math standards. The math standards are a great guide to help you identify what you need to have all students master. However, I have been hearing of several cases of schools turning the junior year of high school into a big test prep session. This is an unethical misuse of the standards. Using the standards to raise the learning and achievement of all students should be the goal teachers of mathematics in all South Dakota schools. Spending an entire year reviewing core standards that should have been mastered in Algebra I and geometry puts teachers in an unethical position. This reminds me of years ago when we used to have teachers that thought unless students mastered basic arithmetic they couldn't do any interesting problem solving or any higher order thinking.

Looking for an interesting way to help you achieve your 10% effective change with students? Please see the articles on the Japan Fulbright scholars, the activities submitted by SD teachers or check out ON Math, the NCTM electronic journal. Don't forget the best opportunity to enhance your professional development is at the annual conference in February. This year, the state board of education and members from the state department will be attending to hear from you on your needs in professional development in mathematics. We need your presence!

Please consider during a short presentation at the conference. I am always amazed at the great things teachers are doing across the state and yet they don't share what they are doing. If presenting is a little intimidating, consider attending the Thursday sharing session. It is an informal low key event where teachers can share strategies that they have found effective.

In closing, I would be remiss if I didn't use this little space to thank Chuck Holmstrom for the fantastic job that he has done in the past two years leading our organization. Because of his leadership, our organization has been a key stakeholder in every mathematics project that has happened in the state and we will be for the foreseeable future.

Bill Gripentrog
SDCTM President

FALL 2006

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Inside this issue:

Calendar Notes:

- *February 1-3, 2007 SDCTM/SDSTA Conference in Huron*
- *PAEMST Applications due May 2005*

PAEMST News Brief

Sandra Ullrich and Brenda Danielson are state finalists for the 2006 Elementary Presidential Award for Excellence in Mathematics Teaching.

Sandra Ullrich teaches at Lincoln Elementary in Aberdeen, South Dakota. She has been teaching for 26 years. She teaches third grade. Her lesson focused on teaching probability to her students.

Congratulations to Sandra Ullrich and Brenda Danielson!

Brenda Danielson teaches at Scotland Elementary in Scotland, South Dakota. She had been teaching for 16 years. She teaches first grade. Her lesson focused on teaching greater than and less than to her students.

The Presidential Awards for Excellence in Mathematics Teaching Program was established in 1983 by the White House and is sponsored by the National Science Foundation. The program identifies outstanding mathematics and science teachers for Kindergarten through 12th grade, in the 50 states and four U.S. jurisdictions. The teachers serve as models for their colleagues and as leaders in the improvement of science and mathematics education.

These teachers are national role models for educators to emulate; for students to admire; and for parents, administrators, and communities to nurture. PAEMST Awardees have been shown to devote more time to professional development, to incorporate innovative approaches into their classroom teaching and to be more likely to use computers and other technologies in their classrooms.

Every year up to 108 National Awardees each receive a $10,000 award, a paid trip for two to Washington, DC to attend a week-long series of networking opportunities and recognition events, and a special citation signed by the President of the United States. The national award will be announced by the President of the United States sometime before the national award week which is in March 2007.

Nominations for 2007 PAEMST

Know a Great 7-12 Math Teacher? Nominate him or her to receive the Presidential Teaching Award!

Nominate an outstanding secondary teacher for 2007 PAEMST.

We're looking for outstanding 7-12 math teachers for the 2007 Presidential Awards for Excellence in Mathematics and Science Teaching. The awards are sponsored by the White House and administered by the National Science Foundation.

Every year up to 108 National Awardees each receive a $10,000 award, a paid trip for two to Washington, DC to attend a week-long series of networking opportunities and recognition events, and a special citation signed by the President of the United States.

The program is now accepting nominations of 7-12 teachers for the nation's highest honor for mathematics and science teachers. Anyone can nominate a teacher. Teachers should submit completed application materials by May, 2007. **For more information, including nomination and application forms, please visit www.nsf.gov/pa or www.sdctm.org and click on the awards link.**

"JIM GOEHRING SCHOLARSHIP FOR FUTURE LEADERS"

"The Jim Goehring Scholarship for Future Leaders" has been established to encourage new teachers of math and science to become professionally involved on the state level. The scholarship, which is good for a free one or two day registration at the Joint Conference of the South Dakota Council of Teachers of Mathematics and the South Dakota Science Teachers Association, is available to teachers who meet the following criteria:

- Is a K-12 teacher of math or science who is in their first year of teaching in SD
- belongs to SDCTM or SDSTA Applicants must pay their own dues to their chosen organization.

The application process is simple. It involves filling out the form below, getting it signed by your building principal, and mailing it to Steve Caron along with the regular conference registration form which is available at www.sdctm.org.

The scholarship is good for a free one or two day registration at the Joint SDCTM/ SDSTA Conference.

****

APPLICATION
"JIM GOEHRING SCHOLARSHIP FOR FUTURE LEADERS"

Name:

School District:

Teaching Assignment:

Membership Information:

_____ I am already a member of SDCTM SDSTA (Circle one or both)

_____ I am joining SDCTM and/or SDSTA (Circle one or both)
I am enclosing a check for
_____ $5.00 for elementary per organization
_____ $10.00 for Middle/High School per organization

(Name)_____ is in his/her first year of teaching in SD at

_____ School District during the 2006-2007 school

year and is thus eligible for 'The Jim Goehring Scholarship for Future Leaders."

Signed:_____, Building Principal

Japan Fulbright Memorial Fund Teacher Program

The Japan Fulbright Memorial Fund (JFMF) Teacher Program allows distinguished primary and secondary school educators in the U.S. to travel to Japan for three weeks in an effort to promote greater intercultural understanding between the two nations. This year up to 400 educators from all over the United States will be selected to participate in the 2007 program.

Apply online at www.iie.org/jfmf

Participating educators will begin their visit in Tokyo with a practical orientation on Japanese life and culture and meetings with Japanese government officials and educators. They then will travel in groups of 20 to selected host cities where they will have direct contact with Japanese teachers and students during visits to primary and secondary schools as well as a teachers college. They also will visit cultural sites and local industries in addition to a brief homestay with a Japanese family.

The Japan Fulbright Memorial Fund, based in Tokyo, oversees all aspects of the Teacher Program. The program is sponsored by the Government of Japan and was launched in 1997 to commemorate the 50th anniversary of the U.S. government Fulbright Program, which has enabled more than 6,000 Japanese citizens to study in the U.S. on Fulbright fellowships for graduate education and research. The Institute of International Education acts as the agency for the Japan Fulbright Memorial Fund to coordinate the recruitment and pre-departure activities of the Teacher Program in the United States.

In 2007, up to four hundred educators from all 50 states and the District of Columbia will be invited to visit Japan in June and October (200 in each group). To date, more than 5,200 primary and secondary educators visited Japan through the JFMF Teacher Program. Upon their return, program participants share what they have learned about Japan with their students and communities through a variety of outreach projects.

"It has been an amazing journey taking me farther away than I have ever been before and yet bringing me closer to another country than I could have ever imagined."

— Susan Herron, JFMF 2000 Participant

Primary and secondary school educators throughout the United States can apply to take part in one of the two trips to Japan scheduled for 2007, as guests of the Japanese Government. Teachers of all disciplines, including art, physical education, English, ESL, history, geography, math, science, and special education, from every region of the United States, are encouraged to apply. Applicants are not required or expected to have previous knowledge of Japanese or Japan. The application deadline for both 2007 trips is December 7, 2006. For more information about the 2007 competition, please refer to http://www.fulbrightmemorialfund.jp or contact 1-888-527-2636 (1-888-Japan-FMF) or jfmf@iie.org. All applications must be completed online.

Jessica Golliday
Senior Program Associate
Japan Fulbright Memorial Fund Teacher Program
Institute of International Education
E-mail: jgolliday@iie.org

Math HERO Volunteers at O'Gorman High School

Can you imagine doing math homework for 50+ years? Gwen Valkenaar has been doing just that. After retiring from a successful teaching career at Axtel Park Middle School in 1988, Gwen gave principal Tom Lorang a call and that fall, her volunteering career at O'Gorman High School was set in motion. For the past 18 years Gwen has faithfully and enthusiastically tutored students with a myriad of algebra and geometry equations, questions and problems.

Gwen's commitment and sincere love for her students and the high school are truly remarkable. She serves about 15 students on a daily basis. Her nimble mind wrestles between algebra I and II, and geometry; sometimes all within a few seconds of each other. Her teaching method is one that mirrors that of the actual teacher's method. "I don't want to confuse these kids," she says. She's been known to come to school twice in one day to assist students who really needed some extra help. "I never tire of math. I tell the kids to do well on their test; it makes me look good if they do," says Gwen with a smile.

According to Jean Rasmussen of OGHS Academic Services, Gwen is very well liked by her students. The feeling is mutual. "I like these kids. They are respectful. They say thank you," says Gwen. Having a booster pass has been a wonderful perk of Valkenaar's volunteering, as she is a faithful supporter of all O'Gorman activities. "O'G has been a great part of my life," she says.

When she is not helping students, or attending a school mass or activity, Gwen keeps busy playing Mahjong, participating in bridge clubs, singing in two choirs at Christ the King Church, and being a player in the Bell Choir. Her life is full. Gwen says, "As long as I am able, I'm going to be helping every day."

Thanks Gwen, for your dedication!

This article, by Katie Fritz, originally appeared in the Spring 2006 issue of *Spirit*, a Sioux Falls Catholic Schools publication.

Do you know a Math HERO?

Help us recognize a Math Hero...there are many around the state! Tell us about people you know who make a difference in math education. Include what they are doing now as well as a short biography.

Please submit articles with or without photos to:
smcquade2@sfcss.org

NCTM Releases Curriculum Focal Points to Focus Math Curricula

The publication is intended to bring more coherence to the very diverse mathematics curricula currently in use.

RESTON, Va., September 12, 2006—The National Council of Teachers of Mathematics (NCTM) today released *Curriculum Focal Points*, which identifies three important mathematical topics at each level, prekindergarten through grade 8. The publication is intended to bring more coherence to the very diverse mathematics curricula currently in use. It provides a framework for states and districts to design more focused curricular expectations and assessments for pre-K–grade 8 mathematics curriculum development.

"The Curriculum Focal Points are designed to promote a discussion on the refinement of mathematics curricula and address the impression that various state and district curricula are 'a mile wide and an inch deep,'" said NCTM President Francis (Skip) Fennell. "The Curriculum Focal Points present a vision for the design of the next generation of state curriculum standards and state tests, and they present a way to bring needed focus to what is taught in mathematics."

State standards often describe specific learning expectations by grade. In some cases there are close to 100 expectations per grade, with different expectations from state to state. The focal points are intended as a first step toward a national discussion on how to bring consistency and coherence to the mathematics curricula used in the United States. At each grade level, prekindergarten through grade 8, the Curriculum Focal Points identify three topics, described as "cohesive clusters of related knowledge, skills, and concepts," which form the necessary foundation for understanding concepts in higherlevel mathematics.

Curriculum Focal Points for Prekindergarten through Grade 8 Mathematics: A Quest for Coherence was developed with the involvement of mathematicians, math educators, curriculum developers, and classroom teachers.

The National Council of Teachers of Mathematics is a public voice of mathematics education, providing vision, leadership, and professional development to support teachers in ensuring mathematics learning of the highest quality for all students. With 100,000 members and more than 240 Affiliates, NCTM is the world's largest organization dedicated to improving mathematics education in prekindergarten through grade 12. The Council's *Principles and Standards for School Mathematics* includes guidelines for excellence in mathematics education and issues a call for all students to engage in more challenging mathematics. NCTM is dedicated to ongoing dialogue and constructive discussion with all stakeholders about what is best for our nation's students.

Secretary Spellings Announces National Mathematics Advisory Panel Members

U.S. Secretary of Education Margaret Spellings has announced 17 expert panelists and six ex-officio members to comprise the National Mathematics Advisory Panel. The panel will advise President Bush and Secretary Spellings on the best use of scientifically based research to advance the teaching and learning of mathematics.

The National Mathematics Advisory Panel (NMP), modeled after the National Reading Panel, will examine and summarize the scientific evidence related to the teaching and learning of mathematics, with a specific focus on preparation for and success in learning algebra. The NMP will issue an interim report by Jan. 31, 2007 and a final report no later than Feb. 28, 2008. These reports will provide policy recommendations on how to improve mathematics achievement for all students.

The National Mathematics Advisory Panel will be chaired by Dr. Larry Faulkner, president of the Houston Endowment and President Emeritus of the University of Texas at Austin. The other panelists are:

- Dr. Deborah Ball, Dean, School of Education and Collegiate Professor, University of Michigan
- Dr. Camilla Benbow, Dean of Education and Human Development, Vanderbilt University, Peabody College
- Dr. A. Wade Boykin, Professor and Director of the Developmental Psychology Graduate Program in the Department of Psychology, Howard University
- Dr. Francis "Skip" Fennell, Professor of Education, McDaniel College (Md.); President, National Council of Teachers of Mathematics
- Dr. David Geary, Curators' Professor, Department of Psychological Sciences, University of Missouri at Columbia
- Dr. Russell Gersten, Executive Director, Instructional Research Group; Professor Emeritus, College for Education, University of Oregon
- Nancy Ichinaga, former Principal, Bennett-Kew Elementary School , Inglewood , Calif.
- Dr. Tom Loveless, Director, Brown Center on Education Policy and Senior Fellow in Governance Studies, The Brookings Institution
- Dr. Liping Ma, Senior Scholar for the Advancement of Teaching, Carnegie Foundation
- Dr. Valerie Reyna, Professor of Human Development and Professor of Psychology, Cornell University
- Dr. Wilfried Schmid, Professor of Mathematics, Harvard University
- Dr. Robert Siegler, Teresa Heinz Professor of Cognitive Psychology, Department of Psychology, Carnegie Mellon University
- Dr. Jim Simons, President of Renaissance Technologies Corporation; former Chairman of the Mathematics Department, State University of New York at Stony Brook
- Dr. Sandra Stotsky, Independent Researcher and consultant in education; former Senior Associate Commissioner, Massachusetts Department of Education
- Vern Williams, Math Teacher, Longfellow Middle School , Fairfax , VA
- Dr. Hung-Hsi Wu, Professor of Mathematics, University of California at Berkeley

Ex-officio members:

- Dan Berch, National Institute of Child Health and Human Development, National Institutes of Health
- Diane Jones, White House Office of Science and Technology Policy
- Tom Luce, Assistant Secretary , U.S. Department of Education
- Kathie Olsen, Deputy Director, National Science Foundation
- Raymond Simon, Deputy Secretary , U.S. Department of Education
- Grover (Russ) Whitehurst, Director, Institute of Education Sciences, U.S. Department of Education

All meetings of the NMP will be open to the public and will be announced in the Federal Register.

For fact sheets on the NMP and the American Competitiveness Initiative please visit: http://www.ed.gov/news/opeds/factsheets/index.html?src=gu

"We All Use Math Every Day"

For more information:
http://www.weallusematheveryday.com

From Texas Instruments and CBS, Sept. 18--Texas Instruments (TI) and the CBS television show "NUMB3RS" announced today they will continue the award-winning national math education program, "We All Use Math Every Day(tm)," for season three of the hit television series premiering on September 22nd. Developed by TI in partnership with CBS and in association with the National Council of Teachers of Mathematics (NCTM) the collaborative education program highlights how math is relevant in students' daily lives and encourages them to study and learn more about the subject..

NCTM Bulletin

ON-Math, the NCTM electronic journal, is free to everyone until June, 2007.
Go to http://my.nctm.org/eresources/journal_home.asp?journal_id=6 to see a collection of interactive articles that are available for classroom use.

We welcome original artwork from you or your students.

A Critical Number

Kyle Halgerson Montrose High School Class of '06.

2007 SPEAKER / PRESENTER PROPOSAL FORM
Joint conference of South Dakota Council of Teachers of Mathematics (SDCTM) and South Dakota Science Teachers Association (SDSTA)
Huron, South Dakota February 1-3, 2007.

Submission of this form constitutes acceptance unless otherwise notified.

OFFICE USE ONLY:
Session No._____
Day _____
Time _____
Location_____

_____
(First Name) (Middle initial) (Last Name)

_____
(Name of School/Affiliation)

_____
(First Name) (Middle initial) (Last Name)

_____
(Name of School/Affiliation)

Preferred Address: (circle one) work home

_____
(Address)

_____
(City) (State) (Zip Code)

_____
(Work Phone) (Home Phone)

_____
(Email)

How should name(s) and affiliation(s) be listed on the conference program?

_____
(Name)

_____
(Affiliation)

_____
(Name)

_____
(Affiliation)

Title of presentation: _____

Brief description: _____

_____

_____

Circle appropriate grade levels: K 1 2 3 4 5 6 7 8 9 10 11 12 C

Length of presentation: _____ one hour _____ two hours _____ three hours

Day of presentation: _____ Friday _____Saturday _____either day _____ both days

Speakers are requested to provide handouts for 30 on a first come, first served basis.

One overhead projector and screen will be provided for each room.
Additional A-V equipment needed (Speakers are expected to bring their own computer and software): _____

Please return this form by October 13, 2006 to:

Jean Gomer
Box 96
White, SD 57276

or email jean.gomer@k12.sd.us

fax (605) 629-3701

All South Dakota speakers must also register for the conference: Use the form at www.sdctm.org

I agree to comply with the guidelines in the "Minimum Safety Guidelines for NSTA Presenters and Workshop Leaders:" during my presentation. NSTA Minimum Safety Guidelines are located online at http://www.nsta.org/coru/safety.html

Last Modified
06/01/06
CK

Signature _____ Date _____

Contact SDCTM with any special needs requests as defined by ADA by emailing Jean Gomer at jean.gomer@k12.sd.us before October 13, 2006

In a Hurry? Step On It!

A. The South Dakota Highway Patrol uses the following **Bond Schedule** to calculate fines for speeding tickets issued on interstate highways.

Mph over posted Speed limit	Fine ($) (includes court costs)
1-5	66
6-10	70
11-15	110
16-25	186
26 and over	236

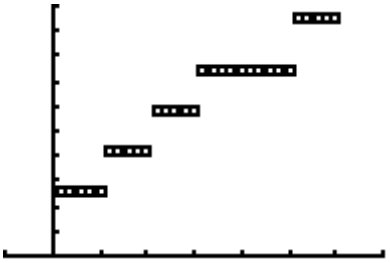
1. Generate a scatterplot that displays this information. Display mph over the posted speed limit on the x-axis, and $ fine on the y-axis.
2. Which is the independent variable? Which is the dependent variable? Explain.
3. Is this relationship a function? Explain.
4. Calculate the linear regression equation associated with this data. Explain in words what the linear regression equation represents. Does it adequately describe the graph? Explain.
5. What type of function would best describe the behavior of this graph? Explain.

B. On other South Dakota Roads, the following **Bond Schedule** is used:

Mph over posted Speed limit	Fine ($) (includes court costs)
1-5	$51
6-10	71
11-15	91
16-25	111
26 and over	171

6. Generate a scatterplot that displays this information. Display mph over the posted speed limit on the x-axis, and $ fine on the y-axis.
7. Which is the independent variable? Which is the dependent variable? Explain.
8. Is this relationship a function? Explain.
9. Calculate the linear regression equation associated with this data. Explain in words what the linear regression equation represents. Does it adequately describe the graph? Explain.
10. What type of function would best describe the behavior of this graph? Explain.

Source: South Dakota Highway Patrol (November 2002)



Answers:

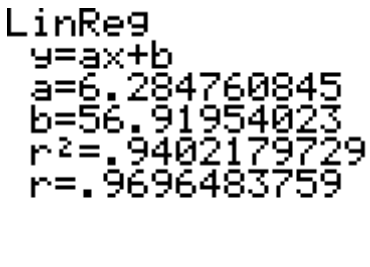
(1) Fine in $

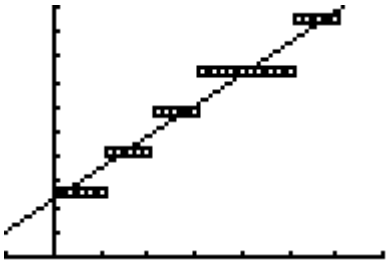
MPH over posted speed limit (interstate highways)

(2) Speed is the independent variable, amount of fine is the dependent variable.

(3) Yes, there is a single value of Y (fine) for each value of X (speed).

(4)



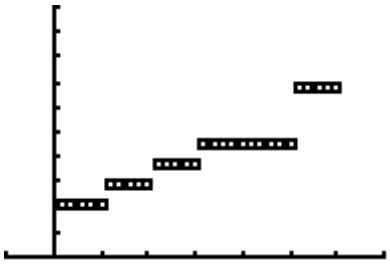


Fine = $6.28(mph over limit) + $56.92

It does not adequately describe the graph because the graph is horizontal in many places.

(5) A step function would describe the behavior of this graph because there is a large change in Y-value (fine) for a small change in X-value (speed.)

(6) Fine ($)



MPH over posted speed limit (other SD roads)

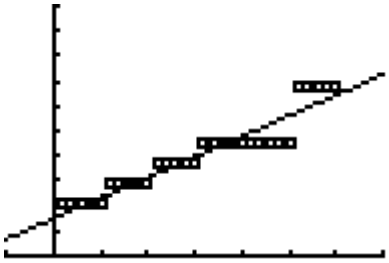
(7) Speed is the independent variable, amount of fine is the dependent variable.

(8) Yes, there is a single value of Y (fine) for each value of X (speed).

Share the Wealth!
South Dakota Teachers have so much to offer one another! Please share an activity with SDCTM members that "works" for you!

(9)

```
LinReg
 y=ax+b
 a=4.115684093
 b=37.20689655
 r²=.885350648
 r=.940930735
```



Fine = $4.11 (MPH over limit) + $37.20
It does not adequately describe the graph because the graph is horizontal in many places.

(10) A step function would describe the behavior of this graph because there is a large change in Y-value (fine) for a small change in X-value (speed.)

Cindy Kroon
Mathematics Instructor
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Montrose, SD 57048

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cindy.kroon@k12.sd.us

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Teacher: "How much is half of 8?"
Pupil: "Up and down or across?"
Teacher: "What do you mean?"
Pupil: "Well, up and down makes a 3 or across the middle leaves a 0!"
~~~~~~

Can You Buy Happiness?

Correlating Salaries and Success in the NFL

Cindy Kroon, Montrose High School
cindy.kroon@k12.sd.us

Football fans are well aware that there are substantial differences in player salaries and team payrolls throughout the NFL, in spite of the salary cap. Does more money buy success? What is the relationship between salary dollars spent and the success of the team as determined by the number of regular-season wins? Use the data in Table 1 to analyze the *dollars* to *wins* situation.

1. Consider the relationship of *median player salary* vs. *number of wins* for the 2004 NFL season. (Table 1) Graph salary as the independent variable and number of wins as the dependent variable. Does the scatterplot reveal an association? Regression equation?

2. Consider the relationship of *team payroll* vs. *number of wins* for the 2004 NFL season. (Table 1) Graph payroll as the independent variable and number of wins as the dependent variable. What does the scatterplot reveal about the relationship? Regression equation?

3. In 2005, the New England Patriots won the Superbowl. Analyze team salary expenses in terms of the team's successful season.

4. The highest-spending team for the 2004 season was the Washington Redskins with a total payroll of $118 million. Analyze the Redskins payroll in terms of spending and success.

5. Can money buy happiness?

(Extension) Conduct an analysis of Major League Baseball data, where there is no salary cap. Will the results be the same?

Sources:

* http://asp.usatoday.com/sports/football/nfl/salaries/totalpayroll.aspx?year=2004

** http://asp.usatoday.com/sports/football/nfl/salaries/mediansalaries.aspx?year=2004

*** http://www.nfl.com/standings/2004/regular

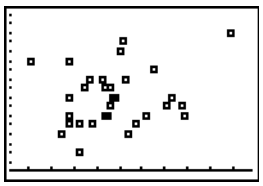
Table 1 2004 NFL Team Payroll

2004 NFL Teams	Total Payroll (millions) *	Median Player Salary (thousands) **	Number of Games Won (regular season)***
Washington Redskins	$ 118.0	$ 539	6
Philadelphia Eagles	$ 105.0	$ 654	13
Houston Texans	$ 97.5	$ 632	7
Detroit Lions	$ 94.6	$ 741	6
Seattle Seahawks	$ 94.0	$ 632	9
Miami Dolphins	$ 94.0	$ 669	4
New York Jets	$ 93.9	$ 664	10
Minnesota Vikings	$ 92.4	$ 642	8
Indianapolis Colts	$ 92.2	$ 537	12
Chicago Bears	$ 87.8	$ 592	5
Carolina Panthers	$ 87.8	$ 756	7
Cleveland Browns	$ 87.8	$ 522	4
Baltimore Ravens	$ 86.5	$ 632	9
Kansas City Chiefs	$ 84.6	$ 789	7
Atlanta Falcons	$ 82.7	$ 724	11
Tampa Bay Buccaneers	$ 82.0	$ 689	5
New York Giants	$ 81.7	$ 708	6
Green Bay Packers	$ 80.4	$ 615	10
Buffalo Bills	$ 80.2	$ 618	9
Tennessee Titans	$ 79.0	$ 538	5
Arizona Cardinals	$ 79.0	$ 621	6
Pittsburgh Steelers	$ 78.0	$ 896	15
Oakland Raiders	$ 77.4	$ 561	5
New England Patriots	$ 77.0	$ 660	14
St. Louis Rams	$ 76.4	$ 537	8
San Diego Chargers	$ 76.3	$ 454	12
New Orleans Saints	$ 73.3	$ 763	8
Denver Broncos	$ 72.6	$ 582	10
Jacksonville Jaguars	$ 72.1	$ 575	9
Cincinnati Bengals	$ 68.8	$ 636	8
Dallas Cowboys	$ 65.4	$ 626	6
San Francisco 49ers	$ 63.0	$ 562	2

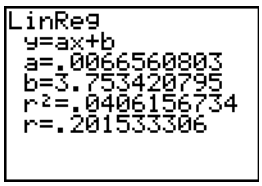
Answers:

1. The graph of *Median Player Salary* vs. N*umber of Wins* is surprising!

Wins



Median Salary

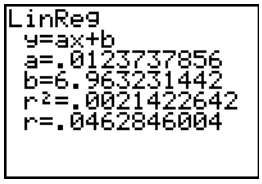


Calculating the linear regression reveals that the correlation (r) is approximately 0.202. Recall that r-values can range from –1 to 1, and r-values close to zero indicate poor correlation. The coefficient of determination (r^2) is only 0.041! So roughly 4% of the variability in wins can be attributed to variability in salaries. It appears that there is very little relationship between median player salary and number of wins. Maybe there will be a stronger relationship with total team payroll...

2. The graph of *Team Payroll* vs. *Number of Wins* is even more surprising:

Wins

Team Payroll



Calculating the linear regression reveals that the correlation (r) is approximately 0.046; this is even worse than the median salary data! The coefficient of determination (r^2) is only 0.002! In layman's terms, less than 1% of the variability in wins can be attributed to variability in payroll expense. Clearly, there is very little relationship between payroll and number of wins.

3. As 2005 Superbowl champions, the Patriots were arguably the "best" NFL team of the 2004 season. With a total payroll of $77 million, the Patriots rank 24th in spending of the 32 NFL teams. Player median income of $660,000 places the Patriots 11th of 32 teams. It could be concluded that the Patriots are "right in the middle of the league" for spending, yet at the top for success.

4. The highest spending team, the Washington Redskins, ($118 million) finished tied for last in their division. Only 7 of the 32 teams had fewer regular-season wins. It appears that paying top-dollar salaries has not led to commensurate success for the Redskins.

5. No, money can't buy happiness! At least not in the NFL!

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Papa Bear, Momma Bear, & Baby Bear

Alternate title if you have no imagination: The altitude to the hypotenuse of a right triangle.

Material: scratch paper, colored pencils, scissors.

This is an instructor-lead large group activity. Q means a sample question for the student.

1. Have students construct a large right triangle, preferably non-isosceles.
Q: Did everybody construct congruent triangles? How do you know?
Q: Did everybody construct similar triangles? How do you know?
Q: How do you know the triangle you constructed is right? How could you convince me that it's right?

2. Cut out your triangle and label the vertices A, B & C. Let C be the right angle. It doesn't matter the order in which you name the acute angles.

3. Color the acute angles in two different colors. Don't color the right angle!
Q: What's the sum of the acute angles? How do you know?

4. Construct another triangle congruent the first triangle.
Note: Don't tell student how do this.
Q: How do you know the triangle you constructed is congruent to the first triangle?
Q: Do you have all six parts of the triangle to know that the triangles are congruent? If not, how many parts do you need? Can you show the triangles are congruent by SSA in the case? Why or why not?

5. Color the acute angles in the same manner that you did the first triangle.

6. Sit on the first triangle.

7. Construct the altitude to the hypotenuse. Call the point where the altitude meets the hypotenuse D.
Note: Once again, don't tell students how to do this. Have them access their prior knowledge and figure it out.
Q: How do you know that what you have constructed is the altitude?
Q: Is the altitude also a median? Why or why not?
Q: You have just constructed two smaller triangles. Are the triangles congruent? If yes, state the congruence statement. If not, explain why the triangles aren't congruent.

8. Cut the triangle along the altitude to form two smaller triangles.
Q: Show the triangle are or are not congruent.

9. Color the other acute angle in the correct color.
Q: How did you know which color to use?
Q: Are the two triangles similar? Explain why or why not. Write/state the similarity statement.
Q: State/list the ratios (proportion) between the sides.

10. Compare the large triangle with the smaller triangles?
Q: Are any of the triangles congruent? How do you know?
Q: Are any of the triangles similar? How do you know? State/write the similar statement.
Q: List/state the congruent angles.
Q: List/state the ratios (proportion) of the sides.

11. Conclude with the students stating the theorem illustrated by the activity. (If an altitude is drawn to the hypotenuse of a right triangle, then: a) all three triangles are similar, b) the altitude to the hypotenuse is the mean proportional between the segments of the hypotenuse, and c) either leg of the original right triangle is the mean proportional between the hypotenuse of the original right triangle and the segment of the hypotenuse adjacent to that leg) Part "a" of the theorem is the most important part to remember because you can figure out the ratios given similar triangles. Also, the students will come to see that the segments that are the mean proportional all radiate form the vertex of the right angle of the original triangle.

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SDCTM/SDSTA JOINT SPRING CONFERENCE

Crossroads Events Center, Huron South Dakota
February 1-3, 2007

Conference information and program booklets will be available online at www.sdctm.org and www.sdsta.org

ADVANCE REGISTRATION *(Postmark by January 20, 2007)*

Name _____
Address _____
City, State, Zip _____
School _____ E-mail _____
Home phone _____ School Phone _____

Please check the appropriate categories for membership, conference registration, and payment.

1. SDCTM/SDSTA MEMBERSHIP(s) and DUES

Please check the appropriate categories. You may join one, both, or neither organization.

Begin/renew SDCTM (math) for one year
_____ Elementary $5
_____ Middle School $10
_____ High School $10
_____ Post-Secondary $10
_____ Student $3
_____ Retired $5
_____ Other $10

Begin/renew SDSTA (science) for one year
_____ Elementary $5
_____ Middle School $10
_____ High School $10
_____ Post-Secondary $10
_____ Student $3
_____ Retired $5
_____ Other $10

2. CONFERENCE REGISTRATION

Please check the appropriate categories. Noon luncheon is included for each day that you register.
***NOTE: The Friday night banquet is NOT included**. Banquet tickets may be purchased for $20 each.*

I will attend the conference on *(check one):* _____ Friday _____ Saturday _____ Both days

SDCTM or SDSTA Member	**Non-Member**	**Student**
_____ One day $40	_____ One day $70	_____ One day $15
_____ Two days $60	_____ Two days $90	_____ Two days $25

College credit will be available; information will be available at the registration table.

*Advance registration must be postmarked by **January 20, 2007** to insure prompt processing. Send this form along with your payment to:*

Steve Caron
907 South 16th Street **School phone (605) 725-8208**
Aberdeen, SD 57401 **Home phone (605) 226-2292**

Email: Steve.Caron@aberdeen.k12.sd.us

3. PAYMENT

All checks/vouchers should be made payable to SDCTM. Purchase orders will NOT be accepted.

Membership SDCTM	$ _____
Membership SDSTA	$ _____
Registration	$ _____
Friday Night Banquet ($20 each)	$ _____
TOTAL ENCLOSED	**$ _____**

Requests for refunds must be received by January 20, 2007

Contact SDCTM with any special needs requests as defined by ADA by emailing Jean Gomer at jean.gomer@k12.sd.us by January 13, 2007

SDCTM Newsletter
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2006-2008
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