

General Education Common Graded Assignment
MATH 125 – Finite Mathematics & Modeling, Spring 2017

Finite Mathematics & Modeling (MATH 125) is a general education course designed to assist students in the development of critical life skills. One of the goals of this assignment is to assess students' competence for each of these objectives:

- I. **Written and Oral Communication Skills** – describe, numerically and graphically, various forms and presentations of statistical data.
- II. **Critical Analysis and Reasoning** – evaluate cultural and social applications and approaches to statistical analysis.
- III. **Technological Competence** – apply technology to the solution of mathematical problems.
- IV. **Information Literacy** – find, evaluate, use, and cite academic resources for conducting research in mathematics.
- V. **Scientific and Quantitative or Logical Reasoning** – describe, numerically and graphically, various forms and presentations of statistical data.

In addition to the above general education objectives, this assignment assesses students' understanding and application of the following skills and knowledge specific to *Finite Mathematics & Modeling (MATH 125)*.

Elementary Statistics:

- Descriptive statistics
- Statistical displays of data
- Analyzing and interpreting statistics in a global community

ASSIGNMENT:

The purpose of this assignment is to provide you with an opportunity to demonstrate the ability to analyze and compare two sets of data using the statistical methods discussed in this course.

The 10,000 meters is a standard track event and it is a part of both the Olympic Games and World Championships. The top 17 finishers of the men's and women's races from the 2015 World Championships are listed.

1. Calculate the mean, median, range, and standard deviation for each data set. You are expected to use at least two technology tools to make your calculations (such as a calculator, Microsoft Excel, etc.). State specifically what technology you used. If you choose to use Microsoft Excel, instructions for these calculations can be found here:
<http://researchbasics.education.uconn.edu/calculatingmeanstandarddev>
2. Explain in three to five sentences how you found the standard deviation. Be sure to describe any technology that you used and how you used it.
3. Suppose the timing device used in the men's race failed to activate at the start of the race and instead began to record the times x seconds into the race. Consider how the competitors' times would be affected. Would the x seconds be added to or subtracted from the times

recorded to find the true times? Would the median you calculated in question #1 be affected? If yes, how? If no, why not?

4. Determine who placed 20th in the men's and the women's 10,000 meter races at the 2016 Summer Olympics in Rio de Janeiro. Record the names, nationalities, and times. Be sure to properly cite at least two sources on a Works Cited page. Under "assignment specifications" below, there are some guidelines to help you with citing your sources.
5. If both of those 20th place finishers from question #4 had competed in the 2015 World Championships with their 2016 Olympic time, where would they have placed? Which one would have done relatively better than the other at the 2015 World Championships? Justify your answer mathematically. Consider using more than one method to justify your answer. For assistance converting minutes into seconds, view this video:
<https://www.khanacademy.org/math/4th-engage-ny/engage-4th-module-7/4th-module-7-topic-a/v/time-unit-conversion>

ASSIGNMENT SPECIFICATIONS:

- This assignment is to be completed individually as a take-home project.
- Your project should be typed; however, mathematical calculations may be handwritten.
- Your facts must be properly cited with a Works Cited page. For citation, use the Modern Language Association (MLA) format and use parenthetical citation with a Works Cited list as the final page (non-content page). Purdue University offers a very good online reference at their Writing Lab's website.
 - <http://owl.english.purdue.edu/owl/resource/747/01/>
 - <http://www.cbcmd.edu/Resources-for-Students/Tutoring-and-Academic-Coaching/Writing-Center-and-Online-Writing-Lab/Documenting-and-Citing-Sources.aspx>

GRADING:

- This assignment will account for 10% of your total course grade.
- See attached rubric for details about how your project will be graded.

SUBMISSION GUIDELINES:

- This project is due on _____.
- Please submit two hard copies of your assignment. The first copy should include your name in the upper left-hand corner. The second copy should include only your student ID, course, and section in the upper left-hand corner (not your name).

Men's 2015 World Championship – Final Results (top 17 finishers)

Rank	Name	Nationality	Time (seconds)
1	Mo Farah	Great Britain (GBR)	1621.13
2	Geoffrey Kipsang	Kenya (KEN)	1621.76
3	Paul Tanui	Kenya (KEN)	1622.83
4	Bedan Karoki	Kenya (KEN)	1624.77
5	Galen Rupp	United States (USA)	1628.91
6	Abrar Osman	Eritrea (ERI)	1663.21
7	Ali Kaya	Turkey (TUR)	1663.69
8	Timothy Toroitich	Uganda (UGA)	1664.90
9	Joshua Kiprui Cheptegei	Uganda (UGA)	1668.89
10	Muktar Edris	Ethiopia (ETH)	1674.47
11	Mosinet Geremew	Ethiopia (ETH)	1687.50
12	El Hassan El-Abbassi	Bahrain (BHR)	1692.57
13	Nguse Tesfaldet	Eritrea (ERI)	1694.72
14	Cameron Levins	Canada (CAN)	1695.19
15	Hassan Mead	United States (USA)	1696.30
16	Shadrack Kipchirchir	United States (USA)	1696.30
17	Arne Gabius	Germany (GER)	1704.47

Women's 2015 World Championship – Final Results (top 17 finishers)

Rank	Name	Nationality	Time (seconds)
1	Vivian Cheruiyot	Kenya (KEN)	1901.31
2	Gelete Burka	Ethiopia (ETH)	1901.77
3	Emily Infeld	United States (USA)	1903.49
4	Molly Huddle	United States (USA)	1903.58
5	Sally Kipyego	Kenya (KEN)	1904.42
6	Shalane Flanagan	United States (USA)	1906.23
7	Alemitu Heroye	Ethiopia (ETH)	1909.73
8	Betsy Saina	Kenya (KEN)	1911.35
9	Belaynesh Oljira	Ethiopia (ETH)	1913.01
10	Susan Kuijken	Netherlands (NED)	1914.32
11	Jip Vastenburger	Netherlands (NED)	1923.03
12	Sara Moreira	Portugal (POR)	1926.14
13	Kasumi Nishihara	Japan (JPN)	1932.95
14	Brenda Flores	Mexico (MEX)	1935.26
15	Kate Avery	Great Britain (GBR)	1936.19
16	Trihas Gebre	Spain (ESP)	1940.87
17	Juliet Chekwel	Uganda (UGA)	1940.95

International Association of Athletics Federations. *15th IAAF World Championships Timetable by Discipline*, www.iaaf.org/competitions/iaaf-world-championships/15th-iaaf-world-championships-4875/timetable/bydiscipline. Accessed 5 Oct. 2016.