

Practice Quiz #2 for Exam #3
Fall 2017

STAT 110: Practice Quiz
Fall 2017

Name: SOLUTION

The Fools Five is a major regional fundraising event for cancer. This year, Fool's Five raised over \$75,000 for cancer research.



Race results are provided online

Rank	Athlete	Bib	Time
1	Josiah Swanson	2775	00:27:29
2	Andrew Johnson	2602	00:30:32
3	Braydon Kubat	2498	00:30:34

The results from the 2016 Fools Five race are provided on our course website. Download this file. The Mile Pace will be the primary variable of interest for this quiz.

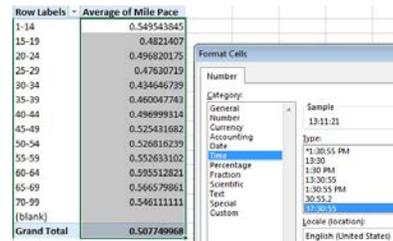
Rank	Name	Bib	Distance	Time	Mile Pace	Hometown	Division	Div Rank	Gender	Age Group
1	Josiah Swanson	2775	8K	0:27:29	5:32:00	Rochester, MN	MALE 20-24	1	MALE	20-24
2	Andrew Johnson	2602	8K	0:30:32	6:09:00	Rochester, MN	MALE 20-24	2	MALE	20-24
3	Braydon Kubat	2498	8K	0:30:34	6:09:00	Owatonna, MN	MALE 15-19	1	MALE	15-19
4	Gerad Mead	3307	8K	0:30:38	6:10:00	Minneapolis, MN	MALE 35-39	1	MALE	35-39
5	Cesar Lopez	2266	8K	0:30:44	6:11:00	Rochester, MN	MALE 25-29	1	MALE	25-29
6	Ryan Ping	2002	8K	0:30:48	6:12:00	Winona, MN	MALE 35-39	2	MALE	35-39
7	Dallas Davidson	2635	8K	0:30:48	6:12:00	Spring Valley, MN	MALE 25-29	2	MALE	25-29
8	Peter Torkelson	2820	8K	0:30:54	6:13:00	Adams, MN	MALE 15-19	2	MALE	15-19
9	Inn Inselman	2828	8K	0:31:20	6:19:00	Rochester, MN	MALE 35-39	1	MALE	35-39

I have computed the average Mile Pace for each age group using PivotTables.

Age Group	Average of Mile Pace	Faster / Slower
1-14	13:11:21	
15-19	11:34:17	1:37:04
20-24	11:55:25	0:21:08
25-29	11:25:53	0:29:32
30-34	10:25:53	0:59:59
35-39	11:02:28	0:36:35
40-44	11:55:41	0:53:13
45-49	12:36:37	0:40:57
50-54	12:38:37	0:02:00
55-59	13:15:47	0:37:11
60-64	14:17:32	1:01:45
65-69	13:35:52	0:41:40
70-99	13:06:24	0:29:29
Grand Total	12:11:10	

Getting appropriate summaries

- 1) Specify Average under Value Field Settings
- 2) Change Number Format to reflect Time



1. Between what two consecutive age groups did Mile Pace times decrease the most?

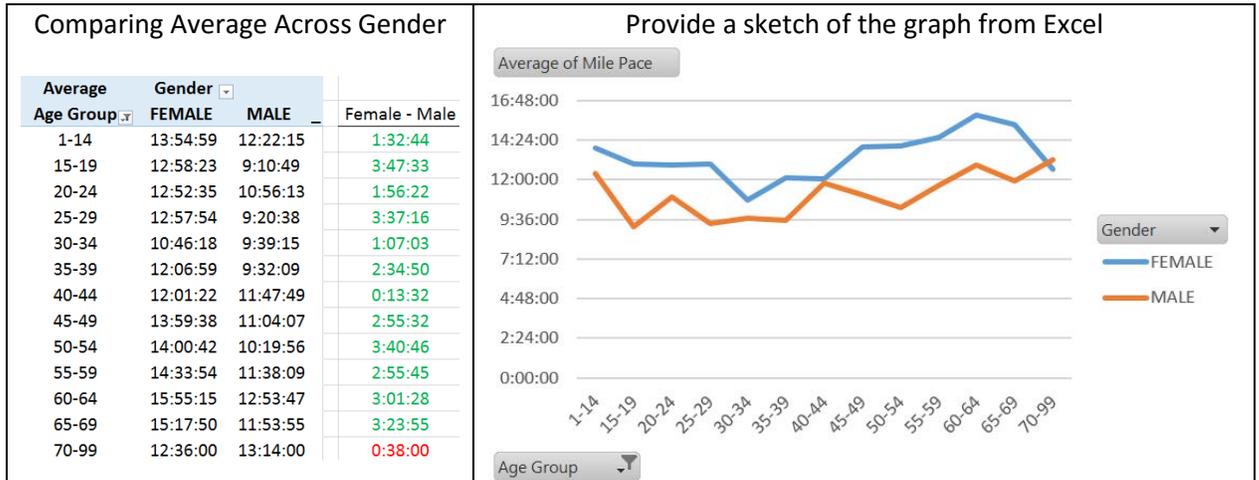
I used Excel to create a Faster/Slower column. Green indicates faster times, i.e. decrease in times, and red indicates an increase in mile pace time. Largest decrease in average pace times occurs between Age Group 1-14 and 15-19.

2. Between what two consecutive age groups did Mile Pace times increase the most?

The largest increase in average mile pace times occurs between Age Group 55-59 and 60-64.

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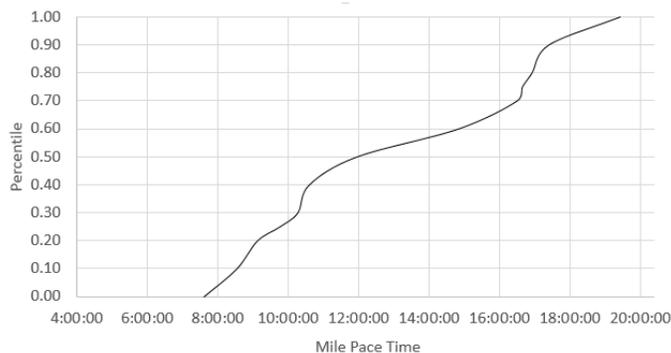
Consider the following chart used to the average Mile Pace times across the Age Groups for Females and Males separately.



3. Physiology differences imply that Mile Pace times are expected to be different across gender.

- a. For what age group is the difference in average mile pace times the smallest?
The Age Group 40-44 had the most similar times – only about 13 seconds difference between Females and Males.
- b. For what age group is the difference in average mile pace times the largest?
The Age Group 15-19 had the biggest gap between Females and Males. Age Groups 25-29 and 50-54 also had fairly wide gaps in times.

4. Consider the following CDF plot for Gender = Males, Age Group = 60-64.

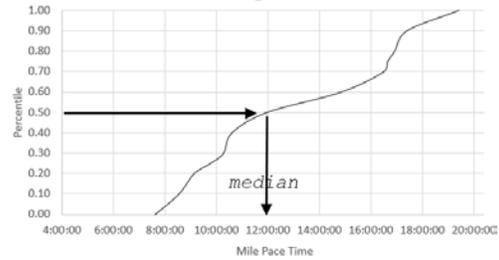


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Answer the following

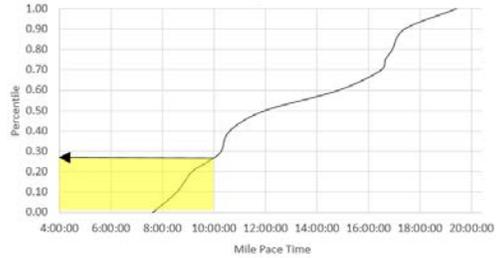
- a. The median mile pace time is about 12 minutes

The 50% percentile appears to be about 12 minutes



- b. About 25-30 % of the people in this group had a mile pace time under 10 minutes.

10 minutes appears to be about the 25-30% percentile in these times



- c. About 17-20 % of the people in this group had a mile pace time between 12 and 16 minutes.

16 mins is about the 70% percentile or maybe a little less and 12 mins is close to the 50% percentile. Between these two times leaves about 17-20% of the data

