Course Info Discussion **Syllabus** Download R and RStudio **R Tutorials** Readings Courseware **Contact Us** Community **Progress** Office Hours

Reflect on the Question

Primary Research Question

How have the world record times for the men's and the women's mile event changed over the years?

Analysis

Let's break this question down into the different descriptive statistics that you will need to construct your answer. Be sure that your R output includes all of the following components.

- 1. Create a subset of the data that contains World Record cases for the men's Mile event.
- 2. Create a subset of the data that contains World Record cases for the women's Mile event.
- 3. Create a scatterplot for each relationship of Mile time and year: one for men and one for women.
- 4. Confirm from these plots that a linear model is appropriate.
- 5. Run a linear model for each event and then interpret the results. Be sure to calculate R-squared values for each model. 1 of 6

(1/1 point)

Which scatterplot shows a **stronger** linear relationship between World Record times in the Mile and Year:

Men's

Help

Show Answer

You have used 1 of 1 submissions

On average, how many *seconds* do men trim off the world record time in the Mile each year? (Round to three decimal places)

0.393

0.393

Final Check

Save

Show Answer

You have used 1 of 2 submissions

(1/1 point)

On average, how many seconds do women trim off the world record time in the Mile each year? (report to three decimal places)

0.973

0.973

Help

Show Answer

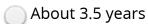
You have used 1 of 1 submissions

(1/1 point)

How many **years** would you predict it would take for the men's mile record to decrease by one full second? Use the model equation to help you answer the question.

About 18 years

• About 2.5 years



About 4 years

Show Answer

You have used 1 of 1 submissions

(1/1 point)

How many **years** would you predict it would take for the women's mile record to decrease by one full second? Use the model equation to help you answer the question.

3 of 6

About 8 years

About 4.5 years

About 2 years

About 1 year

Show Answer

You have used 1 of 1 submissions

(1/1 point)

What proportion of variance in the men's World Record times in the Mile can be explained by year? (report to 3 decimal places)

0.977

0.977

Show Answer

You have used 1 of 1 submissions

(1/1 point)

What proportion of the variance in women's World Record times in the Mile can be explained by year? (report to 3 decimal places)

0.896

0.896

Help

Show Answer

You have used 1 of 1 submissions

(1/1 point)

Which of the following is a reasonable conclusion to draw from this analysis?

- A linear model is a good fit for describing the decrease in record time for the Mile for men, but not for women.
- We cannot fit a linear model to either the men's or the women's mile.
- World record times in the Mile have decreased linearly over the last several decades for both men and women.

Show Answer

You have used 1 of 1 submissions



EdX offers interactive online classes and MOOCs from the world's Analyze the Data | Lab | UT.7.01x Courseware | edX best universities. Online courses from MITx, HarvardX, BerkeleyX, UTx and many other universities. Topics include biology, business, chemistry, computer science, economics, finance, electronics, engineering, food and nutrition, history, humanities, law, literature, math, medicine, music, philosophy, physics, science, statistics and more. EdX is a non-profit online initiative created by founding partners Harvard and MIT.



2014 edX, some rights reserved.

Terms of Service and Honor Code

Privacy Policy (Revised 4/16/2014)

About

t Twitter https://courses.edx.org/courses/UTAustinX/UT.7.01x/3T2014/courseware/840f7...

News

Contact

FAQ

edX Blog

Donate to edX

Jobs at edX

Facebook



Meetup



LinkedIn



Google+

6 of 6 01/13/2015 05:00 PM