Feedback — Quiz 4: Data Science Technology **Please Note: No Grace Period**

Help Center

Authentication is not required for this quiz.

You submitted this quiz on **Wed 5 Aug 2015 9:24 PM PDT**. You got a score of **10.00** out of **10.00**.

Question 1

Which of the following are required for sharing a data set?

Your Answer		Score	Explanation
(•) All of these options	✔	1.00	
( ) An explicit and exact recipe to go from the raw to the tidy data			
( ) A code book describing each variable and its values			
( ) The raw data			
Total		1.00 / 1.00	

Question 2

Which of the following should be included in data tidying recipes?

Your Answer		Score	Explanation
(•) Parameter values for all functions	✔	1.00	
( ) Units of variables			

○ Preprocessed data	
○ Sample size formulae	
Total	1.00 / 1.00

Question 3

What is the central dogma of statistics?

Your Answer		Score	Explanation
◉ Using measurements on a probabilistically selected sample to infer knowledge about a population	✔	1.00	
○ Using Bayes rule to calculate probabilities we care about			
○ That increased power comes with increased sample sizes			
○ Using measurements on a population to infer knowledge about a sample			
Total		1.00 / 1.00	

Question 4

Which of the following are types of variability in all genomic data?

Your Answer		Score	Explanation
○ Genetic drift			
○ Geographic variability			
◉ Natural biological variability	✔	1.00	
○ Variation from changing technology			

Total		1.00 / 1.00

Question 5

Which of the following will increase power in a statistical analysis?

Your Answer		Score	Explanation
Using a new technology			
Adjusting for confounders			
Increasing measurement variation			
Decreasing variance	✔	1.00	
Total		1.00 / 1.00	

Question 6

If 100 p-values are calculated on a data set with no signal, how many p-values would we expect to be less than 0.05 on average?

Your Answer		Score	Explanation
20			
50			
0			
5	✔	1.00	
Total		1.00 / 1.00	

Question 7

If we report 500 results as significant out of 10,000 tests while controlling the family-wise error rate at 5%, about how many false positives do we expect?

Your Answer		Score	Explanation
0	✔	1.00	
200			
10			
20			
Total		1.00 / 1.00	

Question 8

What is the most common confounder in genomics?

Your Answer		Score	Explanation
Genetic background			
Sex			
Population stratification			
Batch effects	✔	1.00	
Total		1.00 / 1.00	

Question 9

Which of the following can be used to address potential confounders at the experimental design stage?

Your Answer		Score	Explanation
Increasing sample size			
Multiple testing correction			
Blocking	✔	1.00	
Measuring DNA instead of RNA			
Total		1.00 / 1.00	

Question 10

Which of the following are benefits of making big data as small as possible as soon as possible?

Your Answer		Score	Explanation
Reduced data will increase the power of statistical tests			
Smaller data sets are easier to share	✔	1.00	
Smaller data sets will decrease false discovery rates			
Reducing the data will reduce the number of hypothesis tests			
Total		1.00 / 1.00	