

Classifying variables

Question 1 (1 point)



The table below gives data for the top American male swimmer in a sample of races from the 2012 Summer Olympics. (There are eight swimmers in each race, swimming in lanes numbered 1 to 8, from left to right.)

Race	Swimmer	Lane #	Time	Placing	Medal
50 m Freestyle	Cullen Jones	5	21.54	2nd	Silver
100 m Freestyle	Nathan Adrian	5	47.52	1st	Gold
200 m Freestyle	Ryan Lochte	2	1:45.04	4th	None
100 m Backstroke	Matthew Grevers	4	52.16	1st	Gold
200 m Backstroke	Tyler Clary	4	1:53.41	1st	Gold
100 m Breaststroke	Brendan Hansen	8	59.49	3rd	Bronze
200 m Breaststroke	Scott Wertz	6	2:09.02	5th	None
100 m Butterfly	Michael Phelps	4	51.21	1st	Gold

The variable **medal** is:

Question 1 options:

- A) Quantitative
- B) Categorical and Nominal
- C) Categorical and Ordinal

Question 2 (1 point)



The table below gives data for the top American male swimmer in a sample of races from the 2012 Summer Olympics. (There are eight swimmers in each race, swimming in lanes numbered 1 to 8, from left to right.)

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200 m Breaststroke	Scott Wertz	6	2:09.02	5th	None
100 m Butterfly	Michael Phelps	4	51.21	1st	Gold

The variable **lane #** is:

Question 2 options:

- A) Categorical and Nominal
- B) Quantitative
- C) Categorical and Ordinal

Question 3 (1 point)



The table below gives data for the top American male swimmer in a sample of races from the 2012 Summer Olympics. (There are eight swimmers in each race, swimming in lanes numbered 1 to 8, from left to right.)

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The variable **race** is:

Question 3 options:

- A) Categorical and Nominal
- B) Categorical and Ordinal
- C) Quantitative

Question 4 (1 point)



The table below gives data for the top American male swimmer in a sample of races from the 2012 Summer Olympics. (There are eight swimmers in each race, swimming in lanes numbered 1 to 8, from left to right.)

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100 m Breaststroke	Brendan Hansen	8	59.49	3rd	Bronze
200 m Breaststroke	Scott Wertz	6	2:09.02	5th	None
100 m Butterfly	Michael Phelps	4	51.21	1st	Gold

The variable **swimmer** is:

Question 4 options:

- A) Categorical and Nominal
- B) Quantitative
- C) Categorical and Ordinal

Question 5 (1 point)



The table below gives data for the top American male swimmer in a sample of races from the 2012 Summer Olympics. (There are eight swimmers in each race, swimming in lanes numbered 1 to 8, from left to right.)

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100 m Breaststroke	Brendan Hansen	8	59.49	3rd	Bronze
200 m Breaststroke	Scott Wertz	6	2:09.02	5th	None
100 m Butterfly	Michael Phelps	4	51.21	1st	Gold

The variable **placing** is:

Question 5 options:

- A) Quantitative
- B) Categorical and Nominal
- C) Categorical and Ordinal

Question 6 (1 point)



The table below gives data for the top American male swimmer in a sample of races from the 2012 Summer Olympics. (There are eight swimmers in each race, swimming in lanes numbered 1 to 8, from left to right.)

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200 m Breaststroke	Scott Wertz	6	2:09.02	5th	None
100 m Butterfly	Michael Phelps	4	51.21	1st	Gold

The variable **time** is:

Question 6 options:

- A) Categorical and Ordinal
- B) Quantitative
- C) Categorical and Nominal

Question 7 (2 points)



A researcher recorded the duration of storms in Tampa Bay, Florida one year. A frequency distribution of the duration of the storms (in minutes) is shown below:

Duration	Frequency
0-25	6
25-50	14
50-75	17
75-100	25
100-125	15
125-150	9
150-175	6
175-200	5
200-225	3
225-250	1
250-275	1

Which interval contains the third quartile of data values?

Question 7 options:

- A) 100-125
- B) 125-150
- C) 150-175
- D) 175-200
- E) None of the above

Question 8 (2.5 points)



The following are the weights (in pounds) of 54 university males:

137 140 142 143 148 149 149 150 150

152 152 154 156 157 157 157 158 158

158 159 159 160 161 162 162 162 162

164 165 165 165 165 165 166 166 166

167 167 167 168 168 170 172 172 173

174 174 175 177 180 181 183 184 193

If we construct an outlier boxplot for weights, which values would be identified as outliers?

(If your answer is not completely correct, no partial credit will be given.)

Question 8 options:

- A) There are no outliers.
- B) 137
- C) 140
- D) 142
- E) 143
- F) 180
- G) 181
- H) 183
- I) 184
- J) 193

Question 9 (1.5 points)



The following are the weights (in pounds) of 54 university males:

137 140 142 143 148 149 149 150 150

152 152 154 156 157 157 157 158 158

158 159 159 160 161 162 162 162 162

164 165 165 165 165 165 166 166 166

167 167 167 168 168 170 172 172 173

174 174 175 177 180 181 183 184 193

If we constructed an outlier boxplot for this data set, the lines coming out of the box (the whiskers) would extend to which values?

Question 9 options:

- A) 140.5 and 184.5
- B) 140 and 193
- C) 137 and 193
- D) 142 and 184
- E) 147 and 180

Question 10 (2 points)



Consider the following three data sets:

$$A = \{7, 9, 10, 11, 13\}$$

$$B = \{10, 10, 10, 10, 10\}$$

$$C = \{1, 1, 10, 19, 19\}$$

Each of these data sets have a mean of 10.

- (a) Explain why data set C has the largest standard deviation without doing any calculations.
- (b) Explain why data set B has the smallest standard deviation without doing any calculations.



Question 11 (2 points)



After completing all of the term work except the final exam, John is trying to figure out what score he needs on the final exam to get a B in the course. A student must have a final grade of 70% to get a B in the course.

The coursework is weighted as follows:

Midterm exam: 35%

Assignments: 15%

Final exam: 50%

John's score on the midterm exam was 63% and his score on assignments was 82%. What score does John need on the final exam to end up with a final grade of 70% in the course? Give your answer with 1 decimal place.

Show your work to get full credit.

