Statistics Assessment

ACMSP250
Teacher Answers

Assessment   Navigator   Students   30 Min

Name _____ **Teacher** _____ **Score** _____

Note: Students should be provide with the data in electronic form (calculator/spreadsheet) or students could be prompted to use a subset of the date such as those in alternate columns.

Reaction times for dominant hand (100 students) – measured in seconds

0.46	0.43	0.46	0.25	0.37	0.4	0.39	0.4	0.34	0.34
0.82	0.14	0.29	0.67	0.46	0.38	0.36	0.5	0.7	0.37
0.4	0.44	0.53	0.53	0.5	0.41	0.45	0.33	0.41	0.41
0.4	0.54	0.4	0.38	1.96	0.44	0.32	0.42	0.78	0.38
0.73	0.42	0.35	1.444	1.115	0.28	0.36	0.75	0.44	0.34
0.35	0.36	0.42	0.36	0.51	0.34	0.49	0.5	0.38	0.44
0.27	0.77	0.34	0.37	0.43	0.32	0.33	0.75	0.31	0.3
0.38	0.31	0.48	0.42	0.35	0.39	0.39	0.34	0.46	0.25
0.45	0.36	0.43	0.39	0.29	0.39	0.41	0.41	0.43	0.6
0.56	0.56	0.43	0.36	0.28	0.39	0.74	0.34	0.45	0.31

Reaction times for non-dominant hand (100 students) – measured in seconds

0.42	0.4	0.42	0.4	0.37	1.9	0.47	0.55	0.36	0.32
0.64	0.33	0.26	0.39	0.69	0.4	0.32	0.41	0.71	0.45
0.57	0.46	0.46	0.53	0.4	0.41	0.42	0.39	0.18	0.41
1.7	0.46	0.42	0.38	0.46	0.49	0.48	0.5	0.67	0.41
0.62	0.45	0.42	0.4	1.05	1.5	0.39	0.71	0.54	0.45
0.51	0.34	0.53	0.08	0.65	0.31	0.45	0.42	0.45	1.2997
0.32	0.87	0.34	0.32	0.51	0.37	0.37	1.6	0.38	0.16
0.39	0.37	0.46	0.48	0.35	0.38	0.39	0.32	0.52	0.21
0.43	0.38	0.4	0.43	0.42	0.38	0.44	0.45	0.42	0.54
0.54	0.43	0.59	0.34	1.9	0.35	0.81	0.92	0.42	0.31

Data Source: Australian Bureau of Statistics
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Q.1. What is the median reaction time for the dominant (dom) hand?

[Answer correct to two decimal places]

0.4

Q.2. What is the median reaction time for the non-dominant (non) hand?

[Answer correct to two decimal places]

0.42

Q.3. Which type of graph is most suitable for providing an immediate answer to questions 1 & 2?

a) Boxplot   b) Histogram   c) Dot Plot   d) Pie Chart   e) None of these

Q.4. Which reaction time interval is the **most common** amongst the **dominant** hand data?

a) [0.2, 0.3)   b) [0.3, 0.4)   c) [0.4, 0.5)   d) [0.5, 0.6)   e) [0.6, 0.7)

Q.5.   Which reaction time interval is the **most common** amongst the **non-dominant** hand data?

a)   [0.2, 0.3)   b)   [0.3, 0.4)   c)   [0.4, 0.5)   d)   [0.5, 0.6)   e)   [0.6, 0.7)

Q.6.   Which type of graph is most suitable for providing an immediate answer to questions 4 & 5?

a)   Boxplot   b)   Histogram   c)   Dot Plot   d)   Pie Chart   e)   None of these

Q7 Comment: If students are using a calculator/spreadsheet, a dot plot will automatically sort the values into order while retaining individual points. Box plots or histograms group points so most individual information is lost.

Q.7.   The **non-dominant** hand data contains five data points in the interval [0.6, 0.7). They are:

a)   {0.64, 0.64, 0.64, 0.65, 0.67}   b)   {0.64, 0.64, 0.65, 0.65, 0.67}

c)   {0.64, 0.64, 0.65, 0.66, 0.67}   d)   {0.62, 0.64, 0.65, 0.67, 0.69}

e)   {0.62, 0.62, 0.68, 0.69, 0.69}

Q8 Comment: If students are using a calculator/spreadsheet, a dot plot will automatically sort the values into order making it much easier to identify which point does not exist. Checking for the existence of each point in the entire data set would be very time consuming and prone to errors. Boxplots or histograms group points so most individual information is lost; a dot plot is therefore the most convenient representation to solve the problem.

Q.8.   Which reaction time does **not** occur in the **dominant** hand (dom) data?

a)   0.56   b)   0.70   c)   0.71   d)   0.75   e)   0.82

Q.9.   Which type of graph is most suitable for providing an immediate answer to questions 7 & 8?

a)   Boxplot   b)   Histogram   c)   Dot Plot   d)   Pie Chart   e)   None of these

Q.10.   Which type of graph best shows the outliers in each data set?

a)   Boxplot   b)   Histogram   c)   Dot Plot   d)   Pie Chart   e)   None of these

TEXAS INSTRUMENTS