

## Stat101 Homework Short Report for Topic 06

### Comparison among Sections

#### Overview

The homework results that will be compared are Topico6.A.csv, Topico6.B.csv, Topico6.C.csv.

Figure 1 shows the side-by-side boxplots for the overall scores by section. Table 1 gives the average percentages correct for each learning outcome by section. Any percentages below 80 will be marked red.

	A	C	B
D	95	94	90
E	93.67	86.33	85.67
B	82	90	84
A	84	78.5	76.5
F	74.8	79.6	70.4
C	74	75	59
G	71.5	72.5	62

Table 1: Average percentages correct for each learning outcome by section. Learning outcomes are sorted by the average percentages correct of all sections, from the highest to the lowest.

#### Problematic question sets

ID	LO	Qset	Name	CrtPct
1	A	A	1	78.26
2	A	A	2	82.86
3	A	A	3	94.12
4	A	A	4	88.57
5	A	B	1	88.57
6	A	B	2	78.38
7	A	B	3	84.44
8	A	B	4	90.91
9	A	C	1	75.00
10	A	C	2	65.79
11	A	C	3	68.75
12	A	C	4	80.00

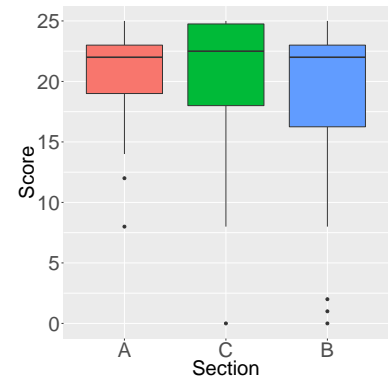


Figure 1: Boxplot for the overall scores by section.

- Use standardizing to determine how many standard deviations an observation is away from the mean value.
- Use z-scores to compare observations for different quantitative variables.
- Explain how standardizing affects the shape, center, and variability of the distribution of a quantitative variable.
- Determine which quantitative variables could be modeled using the normal distribution by interpreting graphical representations of the variable.
- Apply the 68-95-99.
- Find percentile or area values for any given observation from a normal distribution.
- Find the value of an observation when given a percentile or area value from the normal distribution.

13	A	D	1	66.67
14	A	D	2	82.22
15	A	D	3	81.40
16	A	D	4	65.71
19	C	G	1	66.00
20	C	H	1	72.67
27	E	K	whale1	90.62
28	E	K	whale2	86.27
29	E	K	whale3	78.05
30	E	K	cow1	79.07
31	E	K	cow2	91.11
32	E	K	cow3	87.76
33	E	K	bulbs1	89.29
34	E	K	bulbs2	87.76
35	E	K	bulbs3	90.38
45	F	M	mm1	76.67
46	F	M	Bulb1	85.19
47	F	M	IQ1	85.29
48	F	M	Whale1	89.66
49	F	M	Cow1	76.67
50	F	N	mm2	80.00
51	F	N	Bulb2	86.96
52	F	N	IQ2	79.49
53	F	N	Whale2	84.62
54	F	N	Cow2	85.19
55	F	O	mm3	72.00
56	F	O	Bulb3	65.79
57	F	O	IQ3	75.86
58	F	O	Whale3	64.00
59	F	O	Cow3	63.64
60	F	P	mm4	60.00
61	F	P	Bulb4	71.88
62	F	P	IQ4	47.62
63	F	P	Whale4	59.46
64	F	P	Cow4	66.67

65	F	Q	mm5	77.78
66	F	Q	Bulb5	93.10
67	F	Q	IQ5	85.00
68	F	Q	Whale5	69.57
69	F	Q	Cow5	67.74
70	G	R	mm1	68.97
71	G	R	Bulb1	88.00
72	G	R	IQ1	75.76
73	G	R	Whale1	76.47
74	G	R	Cow1	75.86
75	G	S	mm2	88.00
76	G	S	Bulb2	71.43
77	G	S	IQ2	76.67
78	G	S	Whale2	67.39
79	G	S	Cow2	76.19
80	G	T	mm3	46.88
81	G	T	Bulb3	65.22
82	G	T	IQ3	73.81
83	G	T	Whale3	73.91
84	G	T	Cow3	80.00
85	G	U	mm4	57.14
86	G	U	Bulb4	62.96
87	G	U	IQ4	53.85
88	G	U	Whale4	46.15
89	G	U	Cow4	56.52

Table 2: Question sets with any question correct percentage less than 80.

ID	LO	Qset	Name	CrtPct	Flag
1	A	A	1	78.26	*
2	A	A	2	82.86	
3	A	A	3	94.12	*
4	A	A	4	88.57	
13	A	D	1	66.67	*
14	A	D	2	82.22	*
15	A	D	3	81.40	*
16	A	D	4	65.71	*

60	F	P	mm4	60.00	
61	F	P	Bulb4	71.88	*
62	F	P	IQ4	47.62	*
63	F	P	Whale4	59.46	
64	F	P	Cow4	66.67	*
65	F	Q	mm5	77.78	*
66	F	Q	Bulb5	93.10	*
67	F	Q	IQ5	85.00	*
68	F	Q	Whale5	69.57	*
69	F	Q	Cow5	67.74	*
70	G	R	mm1	68.97	*
71	G	R	Bulb1	88.00	*
72	G	R	IQ1	75.76	
73	G	R	Whale1	76.47	
74	G	R	Cow1	75.86	
75	G	S	mm2	88.00	*
76	G	S	Bulb2	71.43	*
77	G	S	IQ2	76.67	
78	G	S	Whale2	67.39	*
79	G	S	Cow2	76.19	
80	G	T	mm3	46.88	*
81	G	T	Bulb3	65.22	*
82	G	T	IQ3	73.81	*
83	G	T	Whale3	73.91	*
84	G	T	Cow3	80.00	*
85	G	U	mm4	57.14	
86	G	U	Bulb4	62.96	*
87	G	U	IQ4	53.85	
88	G	U	Whale4	46.15	*
89	G	U	Cow4	56.52	

Table 3: Question sets with range greater than 15.