Stats 60 / Psych 10 **Quiz 2**

Your name: _____

Quiz rules:

- This quiz is closed book, but you are allowed a single page (both sides) of notes and a calculator.
- There are 6 questions, worth 6 points each.
- A normal table is provided on the last page.
- You have 50 minutes to complete this quiz.
- If you fail to show work and/or explain how you arrived at your answer then no points will be awarded.
- You do not need to solve all the problems to do well! So relax and try your best.

1. In a large class, the average score on the midterm was a 60% with an SD of 10%. The average score on the final was also a 60% with an SD of 20%.

   (a) Predict the final exam score of a student who scored a 70% on the midterm.

   (b) Does your answer to (a) contradict the regression effect? Explain why or why not.

2.

3. In baseball, one measure of a pitcher's performance is ERA, the number of runs surrendered per (9-inning) game pitched. So a pitcher who gives up 43 runs in 10 games would have ERA $= 43/10 = 4.3$. A lower ERA is better.

   Consider two pitchers, Darvish and Tanaka. Suppose Darvish has ERA $= 1.0$ and Tanaka has ERA $= 2.0$ in the first half of the season. Suppose also that in the second half, Darvish has ERA $= 3.0$ and Tanaka has ERA $= 4.0$. Which of the following is true? Choose one.

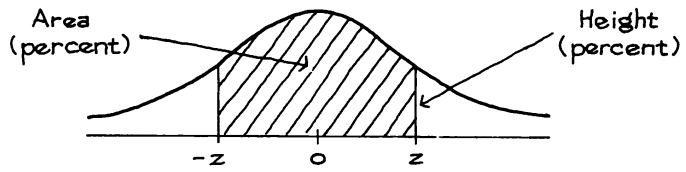
   - Darvish must have the higher ERA for the entire season.
   - Tanaka must have the higher ERA for the entire season.
   - Either Darvish or Tanaka could have higher ERA for the entire season.

   Use numerical examples to illustrate your choice. (Hint: A typical pitcher pitches about 20-30 games in a season if healthy, but fewer if injured.)

4. Stats 60 students study an average of 10 hours a week, with an SD of 2 hours. The correlation between hours spent and exam performance is 0.30. What percentage of Stats 60 students who study 7 hours a week would you expect to score below average on an exam? Or is there not enough information? (If not enough information, please make as precise a statement about the exam performance of these students as possible.)

5.

Tables



A NORMAL TABLE

z	*Height*	*Area*	*z*	*Height*	*Area*	*z*	*Height*	*Area*
0.00	39.89	0	1.50	12.95	86.64	3.00	0.443	99.730
0.05	39.84	3.99	1.55	12.00	87.89	3.05	0.381	99.771
0.10	39.69	7.97	1.60	11.09	89.04	3.10	0.327	99.806
0.15	39.45	11.92	1.65	10.23	90.11	3.15	0.279	99.837
0.20	39.10	15.85	1.70	9.40	91.09	3.20	0.238	99.863
0.25	38.67	19.74	1.75	8.63	91.99	3.25	0.203	99.885
0.30	38.14	23.58	1.80	7.90	92.81	3.30	0.172	99.903
0.35	37.52	27.37	1.85	7.21	93.57	3.35	0.146	99.919
0.40	36.83	31.08	1.90	6.56	94.26	3.40	0.123	99.933
0.45	36.05	34.73	1.95	5.96	94.88	3.45	0.104	99.944
0.50	35.21	38.29	2.00	5.40	95.45	3.50	0.087	99.953
0.55	34.29	41.77	2.05	4.88	95.96	3.55	0.073	99.961
0.60	33.32	45.15	2.10	4.40	96.43	3.60	0.061	99.968
0.65	32.30	48.43	2.15	3.96	96.84	3.65	0.051	99.974
0.70	31.23	51.61	2.20	3.55	97.22	3.70	0.042	99.978
0.75	30.11	54.67	2.25	3.17	97.56	3.75	0.035	99.982
0.80	28.97	57.63	2.30	2.83	97.86	3.80	0.029	99.986
0.85	27.80	60.47	2.35	2.52	98.12	3.85	0.024	99.988
0.90	26.61	63.19	2.40	2.24	98.36	3.90	0.020	99.990
0.95	25.41	65.79	2.45	1.98	98.57	3.95	0.016	99.992
1.00	24.20	68.27	2.50	1.75	98.76	4.00	0.013	99.9937
1.05	22.99	70.63	2.55	1.54	98.92	4.05	0.011	99.9949
1.10	21.79	72.87	2.60	1.36	99.07	4.10	0.009	99.9959
1.15	20.59	74.99	2.65	1.19	99.20	4.15	0.007	99.9967
1.20	19.42	76.99	2.70	1.04	99.31	4.20	0.006	99.9973
1.25	18.26	78.87	2.75	0.91	99.40	4.25	0.005	99.9979
1.30	17.14	80.64	2.80	0.79	99.49	4.30	0.004	99.9983
1.35	16.04	82.30	2.85	9.69	99.56	4.35	0.003	99.9986
1.40	14.97	83.85	2.90	0.60	99.63	4.40	0.002	99.9989
1.45	13.94	85.29	2.95	0.51	99.68	4.45	0.002	99.9991