EXAM 2 K Foster, Principles of Statistics Eco 290, CCNY, Fall 2011	ID#:

The questions are worth 75 points. You have 75 minutes to do the exam, one point per minute.
All answers should be put into the blue books or submitted electronically.
You may refer to your books, notes, calculator, computer, or astrology table. The exam is "open book."
However, **you must not refer to anyone else, either in person or electronically**!
You must do all work on your own. Cheating is harshly penalized.
If you do work on the computer, please submit all those files via Blackboard and email.
Please silence all electronic noisemakers such as mobile phones.
Good luck. Stay cool.

1. (20 points) Please answer this question on Blackboard.
   2.1. For a Normal Distribution with mean 4 and standard deviation 1.8, what is area to the right of -0.1? 0.01310.9893 0.8749 0.1587
   2.2. For a Normal Distribution with mean 7 and standard deviation 2.2, what is area to the left of 4.4? 0.1151 0.0007 0.7257 0.1587
   2.3. For a Normal Distribution with mean 5 and standard deviation 5.3, what is area to the right of 2.9? 0.3446 0.6554 0.1727 0.8273
   2.4. For a Normal Distribution with mean 14 and standard deviation 3.5, what is area to the right of 20.6? 0.4547 0.9713 0.0287 0.1711
   2.5. For a Normal Distribution with mean 4 and standard deviation 1.0, what is area to the left of 3.5? 0.5987 0.3085 0.5013 0.0546
   2.6. For a Normal Distribution with mean 1 and standard deviation 3.3, what is area to the left of 3.0? 0.3821 0.7257 0.3809 0.6191
   2.7. For a Normal Distribution with mean -8 and standard deviation 7.2, what is area in both tails farther from the mean than 5.0? 0.1437 0.8667 0.9641 0.0719
   2.8. For a Normal Distribution with mean 3 and standard deviation 6.8, what is area in both tails farther from the mean than -1.8? 0.4839 0.1587 0.3295 0.7580
   2.9. For a Normal Distribution with mean -9 and standard deviation 7.2, what value leaves probability 0.721 in the left tail? -0.6642 0.2790 0.5858 -4.7821
   2.10. For a Normal Distribution with mean 9 and standard deviation 2.9, what value leaves probability 0.544 in the left tail? 8.6577 9.1602 9.3205 0.4560
   2.11. For a Normal Distribution with mean 13 and standard deviation 6.7, what value leaves probability 0.207 in the left tail? 3.7930 -0.8169 7.5269 18.4731
   2.12. For a Normal Distribution with mean 2 and standard deviation 6.8, what values leave probability 0.367 in both tails? (-2.2497, 6.2497) (-4.1343, 8.1343) (-5.1343, 7.1343) (-0.6080, 1.1962)
   2.13. For a Normal Distribution with mean -6 and standard deviation 4.2, what values leave probability 0.120 in both tails? (-10.9349, -1.0651) (-9.2650, -2.7350) (-8.9665, -3.0335) (-12.5300, 0.5300)

2. (20 points) Please answer this question on Blackboard.
   2.1. A regression coefficient is estimated to be equal to 1.205 with standard error 1.3; there are 22 degrees of freedom. What is the p-value (from the t-statistic) against the null hypothesis of zero? 0.8170 1.6461 0.3640 0.6360

2.2. A regression coefficient is estimated to be equal to -7.986 with standard error 8.1; there are 4 degrees of freedom. What is the p-value (from the t-statistic) against the null hypothesis of zero?
0.6758 0.8350 0.3800 0.0866

2.3. A regression coefficient is estimated to be equal to 8.703 with standard error 9.3; there are 26 degrees of freedom. What is the p-value (from the t-statistic) against the null hypothesis of zero?
0.3580 0.7740 0.0752 0.2018

2.4. A regression coefficient is estimated to be equal to 17.535 with standard error 7.5; there are 6 degrees of freedom. What is the p-value (from the t-statistic) against the null hypothesis of zero?
0.0580 0.1420 0.0000 0.9806

2.5. A regression coefficient is estimated to be equal to -6.496 with standard error 5.6; there are 10 degrees of freedom. What is the p-value (from the t-statistic) against the null hypothesis of zero?
0.7270 0.8428 0.0753 0.2730

2.6. A regression coefficient is estimated to be equal to 5.797 with standard error 2.3; there are 17 degrees of freedom. What is the p-value (from the t-statistic) against the null hypothesis of zero?
0.0220 0.1040 0.0978 0.001

2.7. A regression coefficient is estimated to be equal to 3.823 with standard error 3.3; there are 5 degrees of freedom. What is the p-value (from the t-statistic) against the null hypothesis of zero?
0.0753 0.7010 0.8469 0.2990

2.8. A regression coefficient is estimated to be equal to -2.098 with standard error 1.3; there are 9 degrees of freedom. What is the p-value (from the t-statistic) against the null hypothesis of zero?
0.1410 0.8590 0.3740 0.9410

2.9. A regression coefficient is estimated to be equal to -7.514 with standard error 5.0; there are 31 degrees of freedom. What is the p-value (from the t-statistic) against the null hypothesis of zero?
0.9643 0.0001 0.1430 0.8962

2.10. A regression coefficient is estimated to be equal to 10.965 with standard error 6.1; there are 31 degrees of freedom. What is the p-value (from the t-statistic) against the null hypothesis of zero?
0.0093 0.2310 0.0820 0.9614

3. (20 points) The following output is from a regression on SPSS with the CPS data; the dependent variable is "Wages and Salaries". Fill in the blanks. What is the predicted wage for a 25-year-old Asian female whose parents were immigrants, with an AS degree in a vocational field, married, self-employed at an un-incorporated business?

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
1 (Constant)	-25181.864	1205.273		-20.893	0
Demographics, Age	1858.379	65.735	0.508	__?__	__?__
Age squared	-17.904	0.735	-0.42	__?__	__?__
Female	-14507.904	289.657	-0.145	__?__	__?__
African American	-4493.65	444.5	-0.029	__?__	__?__
Asian	140.766	693.136	0.001	__?__	__?__
Native American Indian or Alaskan or Hawaiian	-3898.462	829.529	-0.013	__?__	__?__
Hispanic	__?__	470.854	-0.032	-9.181	0
Immigrant	__?__	610.924	-0.055	-12.038	0
1 or more parents were immigrants	__?__	559.737	0.027	5.606	0
Education: High School Diploma	__?__	507.962	0.028	6.182	0
Education: Some College but no degree	__?__	535.532	0.076	17.957	0
Education: Associate in vocational	10220.175	__?__	0.043	13.126	0
Education: Associate in academic	13739.167	__?__	0.062	18.371	0
Education: 4-yr degree	27737.896	__?__	0.223	50.275	0
Education: Advanced Degree	54975.701	__?__	0.34	86.69	0
Married	6942.713	__?__	0.069	17.608	0
Divorced or Widowed or Separated	1419.631	513.052	0.01	__?__	__?__
Union member	990.35	1022.944	0.003	__?__	__?__
Veteran (any)	-1434.608	576.692	-0.007	__?__	__?__
work for Federal govt	6740.97	821.476	0.023	__?__	__?__
work for state govt	-10345.286	654.328	-0.044	__?__	__?__
work for local govt	-9641.357	526.36	-0.052	__?__	__?__
self employed, incorp	18190.826	745.19	0.068	__?__	__?__
self employed not inc	-23053.998	1415.4	-0.045	__?__	__?__
work without pay	-4100.955	7579.472	-0.001	__?__	__?__
work_fulltime	18925.467	350.572	0.163	__?__	__?__

a. Dependent Variable: Total wage and salary earnings amount – Person

4. (15 points) A poll about people's favorite email provider also asked about political affiliation. They didn't give the original data so I guessed that it might have looked like the table below.

	Republicans	Democrats	Independents
Google	73	121	81
Yahoo	60	113	72
AOL	78	24	35
other	83	59	82

   a. What fraction of Republicans listed AOL as their favorite email? What fraction of Democrats? Independents?
   b. Is there a statistically significant difference between the fraction of Republicans using AOL and the fraction of Democrats? What is the p-value of this test?
   c. What is the most popular email?
   d. What is the probability that a person is a Republican, conditional on citing AOL as their favorite email provider?