Equation 1: $y=B_0+B_1X_1+B_2X_2$
Equation 2: $y= B_0+B_1X_1+B_2X_2+ B_1X_1X_2$

Hypothesis 1: Democratic countries will have higher levels of gender equality.

Hypothesis 2: Though democracies may provide greater gender equality, democratic institutions still do little to ensure gender equality. Even strong democracies, those with the highest value (10) on Democ11, will still have a great deal of inequality, greater than .5 on the Gender_Unequal scale.

Word_Test_Pres (available on the course website) contains two variables for testing this relationship: Gender_Unequal and Democ. Gender_Unequal is a scale of how much gender inequality a country has. And ranges from 0 to 1. A 0 on the scale is perfect gender equality. A 1 on the scale is perfect gender inequality. Democ11 is a variable ranging from 0-10 measuring how democratic a country is. A 10 on the scale is a democracy and 0 is an authoritarian regime. Using these two variables, the hypothesis above.

1) Given variables and hypothesis above, what kind of regression should you use?
   a) Linear
   b) Binary Logistic Regression

2) Explain your answer to the previous question

	B	t-statistic	p-value
Constant	.645		
Democ11	-.002	-5.352	.000
Adjusted R^2	.171		

3) Is there support for Hypothesis 1?
   a) Yes
   b) No

4) Explain your answer to the previous question, referencing specific statistics from the SPSS regression output.

5) Is there support for Hypothesis 2?
   a) Yes
   b) No

6) Explain your answer to question 5 (you must show your work for this problem).

Hypothesis 3: Controlling for regime type (democratic or authoritarian), countries that spend more money on education will have greater gender equality.

In addition to Gender_Unequal and Democ, World_Full also contains SpendEduc, a variable that measure spending on education as a percentage of GDP. Higher values denote greater public spending on education relative to GDP.

Controlling for regime type,

	B	t-statistic	p-value
Constant	.724		
Democ11	-.001	-4.892	.000
SpendEduc	-.021	-2.763	.007
Adjusted R^2	.200		

7) Is there support for the hypothesis?
   a) Yes
   b) No

8) How do you know there is/there is not support for the hypothesis? Explain your answer references specific statistics from the SPSS regression output.

9) Imagine that the United States increased it spending on education by 5%. Explain how would this affect gender equality, references specific statistics from the SPSS regression output.

10)The adjusted R^2 of _____ means that (complete the sentence)

Hypothesis 4: Democracies will have higher levels of gender equality regardless of the amount of money spend on education, but authoritarian regimes that spend more on education will have greater gender equality than authoritarian regimes that do not spend money on education.

Note: This is proposing an interactive relationship. Notice that the dependent variable regime type has a caveat to it—a conditional statement.

You will need to begin by creating the interaction term in SPSS. Then run the regression.

not missing(Democ11) & not missing (SpendEduc) not missing(Democ11) & not missing (SpendEduc)

	B	t-statistic	p-value
Constant	.655		
Democ11	.000	-.407	.684
SpendEduc	.006	.586	.559
Democ11*SpendEduc	-.004	-3.825	.000
Adjusted R^2	.285		

11)Is there support for Hypothesis 3?

a) Yes
b) No

12) Explain your reasoning., making reference to specific statistics from the SPSS output.

Trump proposes that it's not income that explains who will vote, but rather education. In hypothetical dataset, there is a variable vote2012 that measures whether someone voted for a presidential candidate in 2012. It is coded 1 if they voted and 0 if they did not vote. In addition there is a variable for income, which is on a scale from 1 to 5. Five on the scale is high income and 1 on the scale is low income. There is also a variable for education. It is measured on a scale from 1 to 4 with 1 being low education and 4 being high education.

13) Given variables and hypothesis above, what kind of regression should you use?
a) Linear
b) Binary Logistic Regression

14) Explain your reasoning to question 13.

Here is some hypothetical SPSS output testing Trump's hypothesis.

	Coefficient	p-value	$Exp^{(B)}$
Income	.26	.051	1.308
Education	.68	.002	2.019
Constant	.19		

15) Is there support for Trump's Hypothesis?
   a) Yes
   b) No

16) Explain your answer to question 15 making specific reference to the statistics from the SPSS output.

17) A person who is at 2 on the education scale is _____ times more likely than someone at 1 on the education scale to have voted.

18) The odds ratio of 2.019 means that there is a _____ percent increase in the odds that a person votes for each unit increase in education.