

Math 263
Quiz 13 Spring 2014

Name _____

As some states legalize marijuana, there is much debate about whether using marijuana leads to the use of other, more dangerous, drugs. A 1995 European study¹ looked at the relationship between marijuana use and the use of other drugs (LSD, amphetamines, and cocaine). The table contains the results of a regression analysis of the percentage of 9th graders that had used marijuana against the percentage of 9th graders that had used other drugs.

Other Drugs	Coefficients	Standard Error	t Stat	p-value	Lower 95%	Upper 95%
Intercept	-3.07	2.20	-1.39	0.1974	-8.05	1.92
Marijuana use	0.62	0.08	7.85	0.000003	0.44	0.79

- (a) What is the equation of the regression line that models this relationship? (If you use x and y , please define them!)
- (b) Interpret the slope of the line. Include units.
- (c) If we carry out a hypothesis test:
- (i) What is the null hypothesis?
- (ii) What is the alternate hypothesis?
- (iii) What can you conclude from the p -value? Can you conclude that there is a significant relationship between the use of marijuana and the use of other drugs?
Yes _____ No _____ (check one)
Reason:
- (iv) What can you conclude about the significance of the relationship from the confidence interval for marijuana use?
Significant _____ Not significant _____?
Reason:
- (d) Can you conclude from the study that marijuana use will lead to the use of other drugs?
Yes _____ No _____ (check one)
Reason:

¹ The European School Study Project on Alcohol and Other Drugs, 1995. <http://www.espad.org/>