

ECON 502
Fall 2020
HW#3

(Due online in myCourses by 9:00 am on Tuesday, September 22, 2020)

1. Consider again a joint probability distribution, this time of random variables x and y :

$y x$	0	1	2	3	4
0	0.08	0.07	0.06	0.01	0.01
1	0.06	0.10	0.12	0.05	0.02
2	0.05	0.06	0.09	0.04	0.03
3	0.02	0.03	0.00	0.03	0.04

- a. Obtain $E(y|x)$ and plot it against x . (So, repeat what you did in Problem 1 in HW 1)
 - b. Are x and y statistically independent? How do you know?
 - c. Obtain $E(E(y|x))$. Show that the *law of iterated expectation* (i.e., $E(E(y|x))=E(y)$) indeed holds in this numerical example.
- 2.
- a. Revisit the spread sheet that you developed to solve Problem 3 in Chapter 2 in HW1. Calculate the standard error of the estimate of the slope coefficient.
 - b. Revisit now the R regression output in HW1 using the same data. Highlight/underline in your R result the standard error of the slope estimate and produce it as part of your answer.

Do the following problems from your text book:

Appendix C:
Problem 1

Chapter 2:
Problem 6
Computer Exercises C2, C4, and C6