Table 1: Joint Distribution of Employment status and College Graduation in the U.S. Population Aged 25-64, 1990

Unemployed (Y = 0) Employed (Y = 1) Total

|  |  |  |  |
| --- | --- | --- | --- |
| Non-college grads (X=0) | 0.045 | 0.709 | 0.754 |
| College grads (X=1) | 0.005 | 0.241 | 0.246 |
| Total | 0.050 | 0.950 | 1.000 |

a. Compute E(Y ).

b. The unemployment rate is the fraction of the labor force that is unemployed. Show that the unemployment rate is given by 1-E(Y ).

c. Calculate E(Y|X = 1) and E(Y |X = 0)

e. A randomly selected member of this population reports being unemployed. What is the probability

that this work is a college graduate? A non-college graduate?

f. Are education achievement and employment status independent? Explain.