

Math 1160 – Section 6.5 Answer Key

$$6. Pr(C | E) = \frac{Pr(C \cap E)}{Pr(E)} = \frac{.10}{.25} = .4 \text{ or } 40\%$$

- 12a. **.2** *Draw the Venn Diagram and fill in the probabilities for the 4 basic regions.
12b. $.2/.6 = 1/3$
12c. $.2/.3 = 2/3$
12d. **.4**
12e. $.4/.6 = 2/3$

- 14a. **.2** *Draw the Venn Diagram and fill in the probabilities for the 4 basic regions.
14b. $.2/.3 = 2/3$
14c. $.2/.5 = 2/5$

40a.

$$Pr(E) = 1149547 / 1377126 = .8347 \text{ or } 83.47\%$$

$$Pr(N) = 359654 / 1377126 = .2612 \text{ or } 26.12\%$$

$$Pr(E \cap N) = 305505 / 1377126 = .2218 \text{ or } 22.18\%$$

$$Pr(E | N) = 305505 / 359654 = .8494 \text{ or } 84.94\%$$

$$Pr(N | E) = 305505 / 1049547 = .2911 \text{ or } 29.11\%$$

40b. Are Events E and N independent? **No**

To evaluate, is the $Pr(E)$ the same as the $Pr(E | N)$? Does the occurrence of one event change the probability of the other event occurring.