Basic Probability Concepts – Exercise

Cont'd

- Sample space: the 1,000 households
- Simple events are: "planned to purchase", "did not plan to purchase", "purchased", and "did not purchase"
- Joint events are: "planned to purchase and actually purchased", "planned to purchase and actually did not purchased", "did not plan to purchase and actually purchased", "did not plan to purchase and actually did not purchased"

Conditional Probability – Exercise

Cont'd

- A company is considering changing its starting business hour from 8am to 7:30am. The company has 1200 workers, including 450 office and 750 production workers. A census shows that 370 production workers favor the change, and a total of 715 office and production workers favor the change. Is the relationship between worker type and opinion independent?

$P(Production\ workers\ and\ Favor) = \frac{370}{1200} = 0.3083$

$P(Production\ workers) \times P(Favor) = \frac{750}{1200} \times \frac{715}{1200} = 0.3724$

As P(Production workers and Favor) ≠ P(Production workers)×P(Favor), Worker type and opinion are not statistically independent.