

PROB STAT HONORS

 Name _____

6.4 – INDEPENDENCE

	Cookies	Mugs	Candy
Coffee	20	13	10
Tea	12	10	12

1. The Gift Basket Store had premade gift baskets containing the combinations (shown in the table above) in stock. One gift basket is chosen at random. Are the events *the basket contains tea* and *the basket contains mugs* independent?

	Sale	No Sale
Aggressive	270	310
Passive	416	164

2. In a sales effectiveness seminar, a group of sales representatives tried two approaches to selling a customer a new automobile: the aggressive approach and the passive approach. The results of this experiment are shown in the table above.

Are the events *used an aggressive approach* and *made a sale* independent?

3. A manufacturer makes two models of an item: model A, which accounts for 80% of unit sales, and model B, which accounts for 20% of unit sales. Because of defects, the manufacturer has to replace (or exchange) 10% of its model A and 18% of its model B. An item is selected at random. Are the events *the item is model B* and *the item was replaced* independent?

4. An insurance company classifies drivers as low-risk, medium-risk, and high-risk. Of those insured, 60% are low-risk, 30% are medium-risk, and 10% are high-risk. After a study, the company finds that during a 1-year period, 1% of the low-risk drivers had an accident, 5% of the medium-risk drivers had an accident, and 9% of the high-risk drivers had an accident. A driver is selected at random. Are the events *the driver is high-risk* and *the driver had an accident* independent?