

Math 153 - Quiz 9

October 18, 2018

Name key

Score _____

Show all work to receive full credit. Supply explanations when necessary.

(5 points) The following data were collected in a study of the quality of fast-food chain drive-thru's. The data represent numbers of orders.

	McDonald's	Burger King	Wendy's	Taco Bell	
Order Accurate	329	264	249	145	987
Order Not Accurate	33	54	31	13	131
An order is selected at random.	362	318	280	158	1118

- Find the probability that the order is not accurate.

$$\frac{131}{1118} \approx 11.7\%$$

- Find the probability that the order is not accurate or is from Wendy's.

$$\frac{131 + 280 - 31}{1118} = \frac{380}{1118} \approx 34.0\%$$

- Are the events that the order is not accurate and that the order is from Wendy's mutually exclusive (disjoint)? Explain.

No, THERE ARE 31 ORDERS IN THE INTERSECTION.

- Show how you can determine the probability that the order IS NOT from Wendy's by using the probability that the order IS from Wendy's.

$$P(\bar{A}) = 1 - P(A) \Rightarrow \text{Prob NOT FROM Wendy's} = 1 - \frac{280}{1118} = \frac{838}{1118} \approx 75.0\%$$

- What are the odds against the order being from Wendy's?

$$\frac{838}{1118 - 838} = \frac{838}{280} = \boxed{\frac{419}{140}}$$