

Table Number: _____

Group Name: _____

Group Members: _____

CONDITIONAL PROBABILITY APP ACTIVITY

Go to http://onlinestatbook.com/2/probability/conditional_demo.html

Instructions

The simulation shows a set of 30 objects varying in color (red, blue, and purple) and shape (X and O). One of the objects is to be chosen at random. The various possible conditional probabilities are shown below the objects. Calculate each probability by counting the appropriate objects. Check your work by clicking on the radio button to the left. For example, if you click on $P(X|Red)$ which is read "the probability of X given Red" then a box is put around each of the red objects. Of these, those that are X's are shaded. The probability of X given it is red is the number of red X's (shaded boxes) divided by the total red items (the number of boxes). Do this several times until you feel comfortable using the app to compute conditional probabilities. Click "Another Example" for new distribution of objects.

Once you are comfortable with finding conditional probabilities, please use the set of Xs and Os below to determine the conditional probabilities on the following page.

O	X	X	X	X	O
O	X	O	O	X	O
X	O	O	O	O	X
X	X	X	O	O	O
O	O	X	O	X	X

Another Example

Please click on one of the radio buttons to see the conditional probability:

- | | |
|-------------------------------------|-------------------------------------|
| <input type="radio"/> $P(X Red)$ | <input type="radio"/> $P(Red X)$ |
| <input type="radio"/> $P(X Blue)$ | <input type="radio"/> $P(Blue X)$ |
| <input type="radio"/> $P(X Purple)$ | <input type="radio"/> $P(Purple X)$ |
| <input type="radio"/> $P(O Red)$ | <input type="radio"/> $P(Red O)$ |
| <input type="radio"/> $P(O Blue)$ | <input type="radio"/> $P(Blue O)$ |
| <input type="radio"/> $P(O Purple)$ | <input type="radio"/> $P(Purple O)$ |

1. $P(X|\text{Red})$

7. $P(\text{Red}|X)$

2. $P(X|\text{Blue})$

8. $P(\text{Blue}|X)$

3. $P(X|\text{Purple})$

9. $P(\text{Purple}|X)$

4. $P(O|\text{Red})$

10. $P(\text{Red}|O)$

5. $P(O|\text{Blue})$

11. $P(\text{Blue}|O)$

6. $P(O|\text{Purple})$

12. $P(\text{Purple}|O)$