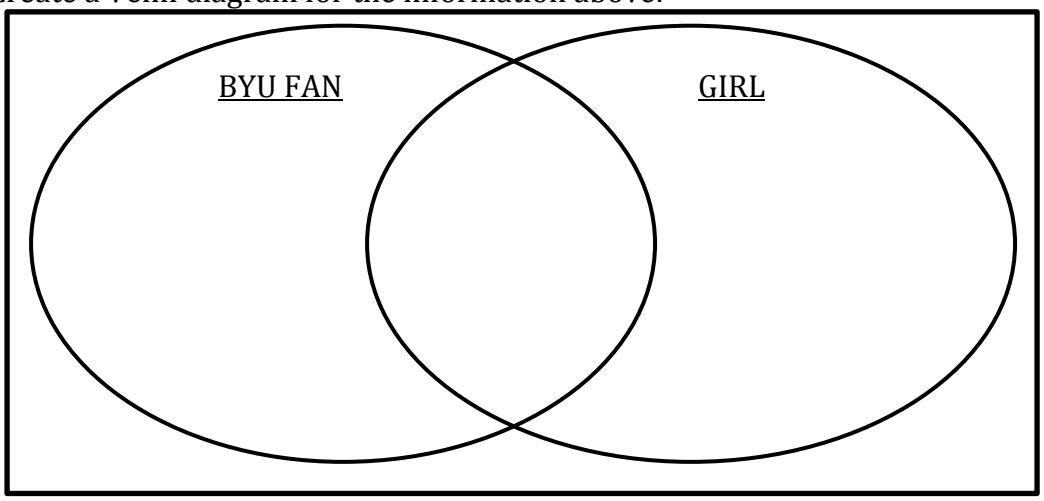
Day 2: Two-Way Tables Date _____

A two-way table records _____ _____ into its frequency (or counts) and the category title. In a two-way table you can only be in **one** of the horizontal categories and **one** of the vertical categories.

We will fill out the table below with data from our class and find the totals.

	Team: BYU	Team: U of U	**Total**
Boy			
Girl			
Total			

Create a Venn diagram for the information above:

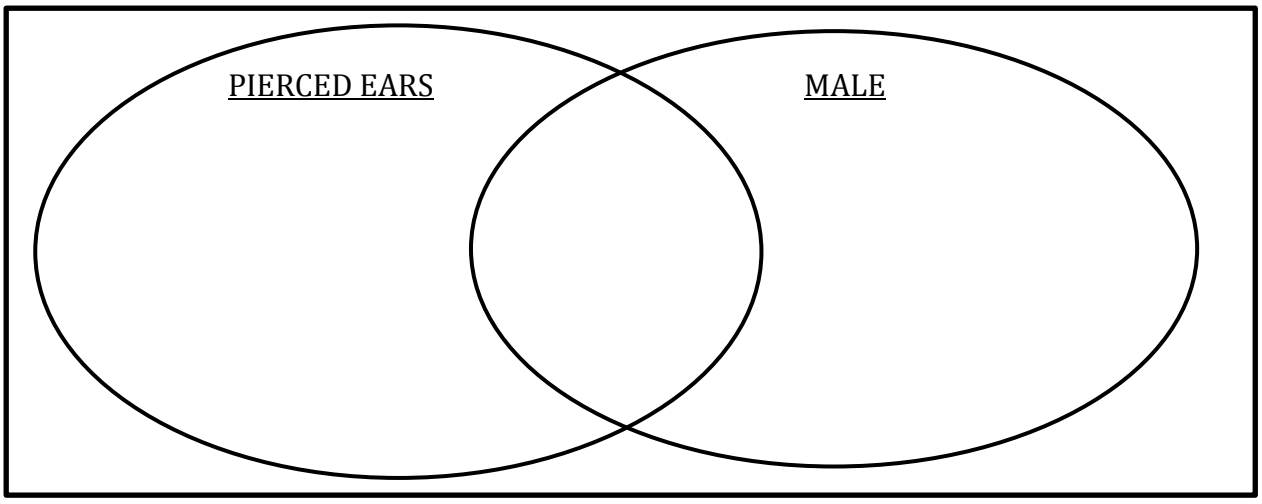


Find the following probabilities.

1. $P(boy) =$
2. $P(BYU\ Fan)$
3. $P(boy\ \cap UofU\ Fan) =$
4. $P(girl \cap UofU\ Fan) =$
5. $P(boy \cup BYU\ Fan) =$
6. $P(girl \cup BYU\ Fan) =$
7. $P(BYU)^c =$

	Pierced Ears?		
Gender	Yes	No	**Total**
Male	19	71	90
Female	84	4	88
Total	103	75	178

Create a Venn diagram for the information above:



8. $P(pierced\ ears) =$

9. $P(female) =$

10. $P(male \cap pierced\ ears)$=

11. $P(female \cap pierced\ ears^c) =$

12. $P(male \cup pierced\ ears)$=

13. $P(pierced\ ears \cup male) =$

Marginal probabilities are _____

Examples:

Where are marginal probabilities always located in a two-way relative frequency table?

_____

Joint probabilities: these are the probabilities in a two-way table of _____ things

_____ _____, such as _____.

Which of the probabilities above is a joint probability? WHY? _____

_____

Where are joint probabilities always located in a two-way relative frequency table?

_____

A deck of cards is commonly used in probability questions. To ensure everyone is familiar with a deck of cards, answer the following:

How many cards are in a standard deck of cards? _____

How many suits are in a deck? _____ How many cards are in each suit? _____

Name the suits: _____

What are the cards in each suit? _____

Which cards are face cards? _____

You have a standard deck of cards. You will pull out one card at random. Find the following probabilities.

14. $P(club) =$

15. $P(queen) =$

16. $P(heart \cap face\ card) =$

17. $P(diamond \cup king) =$

18. $P(heart)^c =$