Name: _____Guide_____ Date: _____

Probability

Table #1:
Cameron surveys students in his school who play sports, and asks them which sport they prefer.
He records the responses in the table below.

Gender	Preferred sport		
	Baseball	**Soccer**	**Basketball**
Male	49	52	16
Female	23	64	33

= 237

1. How many males prefer baseball? 49

2. How many females prefer basketball?

3. What is the probability that a randomly chosen student is <u>female and prefers soccer</u>?

$\frac{64}{237} = .27$

4. What is the probability that a randomly chosen student is male and prefers soccer?

5. What is the probability that any randomly chosen student <u>prefers soccer</u>? $\frac{116}{237} = .49$

Table #2:
Abigail surveys students in different grades, and asks each student which pet they prefer.
The responses are in the table below.

Grade	Preferred pet			
	Bird	**Cat**	**Dog**	**Fish**
9	3	49	53	22
10	7	36	64	10

= 244

6. How many 9 graders prefer cats as a pet?

7. How many 10 graders prefer fish as a pet? 10

8. What is the probability that a randomly chosen student prefers cats and is a 9th grader?

9. What is the probability that a randomly chosen student <u>prefers birds and is a 10th grader?</u> $\frac{7}{244} = .03$

10. What is the probability that any randomly chosen student prefers dogs?

11. What is the probability that any randomly chosen student <u>prefers birds?</u> $\frac{10}{244} = .04$

12. What is the probability that any randomly chosen student is a 9th grader?

Using the table below, answer the following questions.

	Dance	Sports	Movies	TOTAL
Women	16	6	8	30
Men	2	10	8	20
TOTAL	18	16	16	**50**

1. Which is more likely to occur: a woman who enjoys sports or a male who enjoys movies? *Find both probabilities*

   W: $\frac{6}{50}$ = .12   M: $\frac{8}{50}$ = .16   A male who enjoys movies.

2. Given that a person likes dancing, what is the probability that the person is a male?

3. If we only look at the men, what is the probability that they enjoy sports?

   $\frac{10}{20}$ = .5

4. The following table comes from a survey of 100 hikers on the areas of hiking preferred. Complete the table.

   Hiking Area Preference

Gender	The Coastline	Near Lakes & Streams	On Mountain Peaks	Total
Female	18	16	11	45
Male	16	25	14	55
Total	34	41	25	100

5. What percent of people surveyed prefer to hike on mountain peaks?

   $\frac{25}{100}$ = .25 = 25%

6. What percent of females surveyed prefer to hike the coastline?

7. What is the probability that a $\overset{girl}{male}$ prefers to hike near lakes and streams?

   $\frac{25}{55}$ = .45

8. What is the marginal probability of people who prefer to hike the coastline?

9. What percent of people who prefer to hike the coastline are female?

   $\frac{18}{34}$ = .53 = 53%