FST Name:
Notes 7.2 Date: Block:

7.2 Intro to Probability

At the heart of probability theory is _____. Rolling a die, flipping a coin, drawing a card and spinning a game board spinner are all examples of _____. In a random process no individual event is predictable, even though the long range pattern of many individual events often is predictable.

Probability	Is defined as the ratio of the…. _____ To the _____

Ranges from _____ to _____.

Types of Probability	
Experimental	
Theoretical	

Calculating Probabilities

When calculating the probability of something happening, the "something" is called an _____, and the probability of the event happening is written _____.

Ex. 1a) The probability of rolling a 3 on a die would be written _____.
Ex. 1b) The probability of winning the lottery would be written _____.

Probabilities are always expressed as _____. The probability of an event that is certain to happen is ___, while the probability of an impossible event is ___.

To calculate a probability, you count the _____ and divide this number by the total _____.

Probability of an event: P(E) =

<u>Example of Theoretical Probability</u>

Ex. 2) A bag contains 4 blue marbles, 6 green marbles and 3 yellow marbles. A marble is drawn at random from the bag.

a) What's the probability of drawing a green marble?

b) What's the probability of drawing a yellow marble?

c) What's the probability of drawing a green OR yellow marble?

Example of Experimental Probability

Ex. 3) Suppose a study of car accidents and drivers who use mobile phones produced the following data:

	Had a car accident in the last year	Did not have a car accident in the last year	Totals
Driver using mobile phone	45	280	325
Driver not using mobile phone	25	405	430
Totals	70	685	755

This type of table is called a _____

The total number of people in the sample is _____. The row totals are _____ and _____.

The column totals are ____ and _____. Notice that 325 + 430 = _____, and 70 + 685 = _____.

Example. Calculate the following probabilities using the table above:

a) P(a driver is a mobile phone user) =

b) P(a driver had no accident in the last year) =

c) P(a driver using a mobile phone had no accident in the last year) =

Practice: Nine pieces of paper with the numbers 1, 2, 2, 3, 4, 4, 5, 6, and 6 printed on them are placed in a bag. A student chooses one without looking…

a) What is the probability of choosing a number 1?

b) What is the probability of choosing a number 4?

c) What is the probability of choosing an odd number?

d) What is the probability of choosing an odd number or a 6?

Practice. The following (incomplete) table shows a random sample of 100 hikers and the areas of hiking they prefer:

	Coastline	Near lakes and streams	On mountain peaks	Totals
Male	18	16		45
Female			14	55
Totals		41		

a) What is the probability that a hiker is a female?

b) What's the probability that a coastline hiker is a female?

c) What's the probability a male hiker prefers to hike on mountain peaks?