Name:_____ Date:

Classical Method Probabilities

<u>Ex 1:</u>

Experiment

Draw a single ball from the bag \rightarrow Events

- A = You draw a ball with an even number on it
- B = You draw a ball with a prime number on it
- C = You draw a yellow ball
- D = You draw a ball that is both blue and even
- E = You draw a ball with a number larger than 6 on it

F = You draw a ball that is both less than 7 and odd Find

S, A, B, C, D, E, F, P(S), P(A), P(B), P(C), P(D), P(E), P(F)Question: If ball 2 is drawn, which of the above events occurred?

How about if ball 7 is drawn?



Ex 2:

Experiment

Roll a single die once

Events

A = The die lands on an even number

B = The die lands on a multiple of 3

C = The die lands on a prime number

D = The die lands on 4

E = The die lands on a number bigger than 2

F = The die lands on 7

G = The die lands on a number less than 9

Find

S, A, B, C, D, E, F, G, P(A), P(B), P(C), P(D), P(E), P(F), P(G), P(S), P(\emptyset)

<u>Ex 3:</u>

Experiment

Flip a single coin 3 times (or flip 3 coins all at the same time, once) Events

A = The first and third coin land on the same thing

B = All coins land on the same thing

C = The second coin lands on tails

D = The results of each flip alternate

Find

S, A, B, C, D, P(A), P(B), P(C), P(D), P(S), P(Ø)

<u>Ex 4:</u>

Experiment

Roll a single die twice (or roll a pair of dice once) Events

A = The total of the numbers on the die is 7

B = The total of the numbers on the die is at least 11

C = The total of the numbers on the die is at most 4

D = The absolute value of the difference of the numbers on the die is 2

E = You roll doubles

F = The first die lands on 5

G = The first die lands on an even number and the second lands on an odd number Find

S, A, B, C, D, E, F, G, P(A), P(B), P(C), P(D), P(E), P(F), P(G), P(S), P(Ø)

<u>Ex 5</u>:

Experiment

Play a single game of roulette Events

A = The ball lands in an odd slot

B = The ball lands in a red slot

C = The ball lands in a green slot

D = The ball lands on a number that is a multiple of 3

E = The ball lands in a slot that is part of the 1st 12 bet

F = The ball lands in a slot that is part of the 3rd 12 bet and is a black number

G = The ball lands on a number that is part of the 2nd column Find

B, C, F, P(B), P(C), P(F)

<u>Ex 6</u>:

Experiment

Draw a single card from a standard poker deck

Events

A = Draw a heart

B = Draw a black card

C = Draw a red face card

D = Draw a king

E = Draw a card that has a number on it that is less than 5

Find

A, C, E, P(A), P(C), P(E)

Empirical Method Probabilities

For the experiment where you were drawing chips from a bag, write down your best guess for the probability of drawing a blue chip here (this will be the last percentage that you calculated after drawing a chip 25 times)

For the experiment where you were drawing the top 2 cards from a standard poker deck, write down your best guess for the probability of getting a total of 20 here (this will be the last percentage that you calculated after drawing a pair of cards 25 times)

For the experiment where you were rolling a pair of dice, write down your best guess for the probability of rolling a total of 7 (this will be the last percentage that you calculated after rolling a pair of dice 25 times)