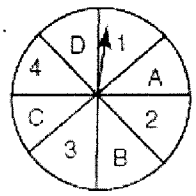
Name: Key Period: Math 7 Date: 3.22.16

Math 7 **Chapter 16** **Pre-Test**

1. An experiment consists of spinning the spinner one time.



a. How many possible outcomes are there?

There are 8 possible outcomes.

b. List the sample space for the experiment.

{A, B, C, D, 1, 2, 3, 4}

c. Determine the probability of the spinner landing on a number or a letter. List the outcomes in this event. Then, calculate the probability.

The outcomes are A, B, C, D, 1, 2, 3, 4.

The probability is 100% that the spinner will land on a # or a letter. $8/8 = 1 = 100\%$

d. Determine the probability of the spinner landing on a consonant or an odd number List the outcomes in this event. Then, calculate the probability.

The outcomes are B, C, D, 1, 3.

The probability of the spinner landing on either a Consonant or an odd number are $5/8$.

2. An experiment consists of tossing a coin 50 times.

a. List the sample space for the experiment.

{heads, tails}

b. How many times do you expect the coin to land on each side?

I expect the coin to land on heads 25 times and tails 25 times.

c. Determine the probability of heads and the probability of tails.

P(heads) = 1/2 = 50% = 0.5

P(tails) = 1/2 = 50% = 0.5

d. Results from tossing the coin 50 times are shown in the table. Calculate the experimental probabilities to complete the table.

Side	Tally	Total	Probability
Heads	𝍸 𝍸 𝍸 𝍸 |	23	23/50
Tails	𝍸 𝍸 𝍸 𝍸 ||	27	27/50

46%

54%

e. Compare the experimental probabilities to the theoretical probabilities you calculated in part (c). Are they the same or different? Explain why.

The experimental and theoretical probabilities differ. Tails occured more frequently (4 more times) than heads when the coins were tossed (experimentally), but, theoretically, they should have both been flipped an equal amount of times (25/50). You may get results other than what was expected when conducting an experiment.

16.5%.

3. Suppose the probability is $16\frac{1}{2}\%$ that a seed will sprout. Design a simulation to determine how many seeds will sprout if a gardener plants 5 seeds in a pot.

(a.) What are the possible outcomes?

0, 1, 2, 3, 4, 5 (how many seeds will sprout)

(Bonus) b. How could you use a computer spreadsheet to simulate the event?

There are 5 seeds, each with a 0.165 chance of sprouting. Thus, I would generate random #'s from 1-1,000 and assign #'s 1-165 to represent a seed that sprouts and assign #166-1,000 to non-sprouting seeds. Run the simulation 5 times to represent one trial & record the # of seeds sprouted (#1-165). Repeat as many trials as possible & graph results

(c.) What function on the spreadsheet would you use to generate the random numbers?

I would use the function RAND BETWEEN.

(Bonus) d. What two numbers will you use in this function to produce the random integers to simulate a trial for planting 5 seeds? Explain.

I would use 1 to 1,000

(e.) How many trials would you run? Explain.

As many as possible, because experimental probability approaches theoretical probability as the # of trials increases.