### Lesson 7 Practice Problems

1. Priya’s cat is pregnant with a litter of 5 kittens. Each kitten has a 30% chance of being chocolate brown. Priya wants to know the probability that at least two of the kittens will be chocolate brown.
* To simulate this, Priya put 3 white cubes and 7 green cubes in a bag. For each trial, Priya pulled out and returned a cube 5 times. Priya conducted 12 trials.
* Here is a table with the results.

| * trial number
 | * outcome
 |
| --- | --- |
| * 1
 | * ggggg
 |
| * 2
 | * gggwg
 |
| * 3
 | * wgwgw
 |
| * 4
 | * gwggg
 |
| * 5
 | * gggwg
 |
| * 6
 | * wwggg
 |
| * 7
 | * gwggg
 |
| * 8
 | * ggwgw
 |
| * 9
 | * wwwgg
 |
| * 10
 | * ggggw
 |
| * 11
 | * wggwg
 |
| * 12
 | * gggwg
 |

* 1. How many successful trials were there? Describe how you determined if a trial was a success.
	2. Based on this simulation, estimate the probability that *exactly* two kittens will be chocolate brown.
	3. Based on this simulation, estimate the probability that *at least* two kittens will be chocolate brown.
	4. Write and answer another question Priya could answer using this simulation.
	5. How could Priya increase the accuracy of the simulation?
1. A team has a 75% chance to win each of the 3 games they will play this week. Clare simulates the week of games by putting 4 pieces of paper in a bag, 3 labeled “win” and 1 labeled “lose.” She draws a paper, writes down the result, then replaces the paper and repeats the process two more times. Clare gets the result: win, win, lose. What can Clare do to estimate the probability the team will win at least 2 games?
	1. List the sample space for selecting a letter a random from the word “PINEAPPLE.”
	2. A letter is randomly selected from the word “PINEAPPLE.” Which is more likely, selecting “E” or selecting “P?” Explain your reasoning.
* (From Unit 8, Lesson 5.)
1. On a graph of side length of a square vs. its perimeter, a few points are plotted.
	1. Add at least two more ordered pairs to the graph.
	* 
	1. Is there a proportional relationship between the perimeter and side length? Explain how you know.
* (From Unit 2, Lesson 11.)



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