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

   a. How many successful trials were there? Describe how you determined if a trial was a success.

   b. Based on this simulation, estimate the probability that *exactly* two kittens will be chocolate brown.

   c. Based on this simulation, estimate the probability that *at least* two kittens will be chocolate brown.

   d. Write and answer another question Priya could answer using this simulation.

   e. How could Priya increase the accuracy of the simulation?

2. 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?

3.   a. List the sample space for selecting a letter a random from the word "PINEAPPLE."

    b. 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.)

4. On a graph of side length of a square vs. its perimeter, a few points are plotted.

    a. Add at least two more ordered pairs to the graph.
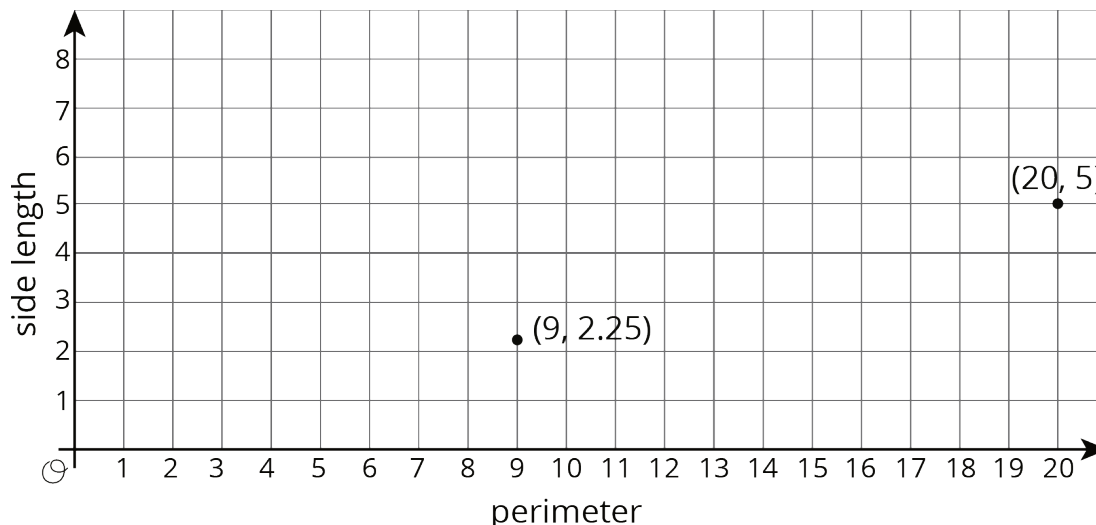
    b. Is there a proportional relationship between the perimeter and side length? Explain how you know.

(From Unit 2, Lesson 11.)

Grade 7 Unit 8

Lesson 7

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