**Math 30-3 Probability Review**

**Probability C1 - Probability Basics**

1. A charity lottery claims that the chance of winning a prize is 1 in 5. Express the probability of winning as a fraction, a decimal, and a percent.
2. You roll one die.
	1. What is the probability of rolling a 4?
	2. What is the probability of rolling a 5?
	3. What is the probability of rolling a 6?
	4. Explain why the answers to parts a), b), and c) are the same.
	5. What is the probability of rolling an even number?
3. On the drive to school you pass two traffic lights.
	1. List all of the possible combinations of lights you could get. Use R for red, G for green, and Y for yellow.
	2. What is the probability of getting 2 red lights?
	3. What is the probability of getting at least 1 red light?
4. Lucy manages a produce store. When ordering apples, she expects that 15% of the apples will arrive spoiled.
	1. If she orders 350 kg of apples, how many kilograms would she expect to arrive spoiled?
	2. On one order, 30 kg of the apples arrived spoiled. How many kilograms would you expect Lucy ordered?

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**Probability C2 - Probability and Odds**

1. You spin the spinner once.

 

* 1. What is the probability of landing on M?
	2. What are the odds of landing on M?
	3. What are the odds against landing on M?
1. You roll two dice.
	1. What is the probability of rolling a total of 9 or more?
	2. What is the probability of rolling a sum that is an odd number?
	3. What are the odds of rolling a sum that is an odd number?
	4. What are the odds against rolling a sum of 3 or less?
2. A restaurant has a scratch-and-win contest. You play four cards and win once.
	1. What percent of tries did you win?
	2. You find out that the odds of winning are 1 in 4. What is the probability of winning?
	3. Did you do better or worse than the odds of winning?

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**Probability C3 - Theoretical & Experimental Probability**

1. Explain the difference between theoretical and experimental probability. Include an example in your explanation.
2. After testing 300 light bulbs, 15 were found to be defective. What is the experimental probability of finding a defective light bulb? Express your answer as a fraction, decimal and percent.
3. What is the theoretical probability of getting a head when you flip a coin? If you flip a coin 20 times how many heads would you expect to get? Flip a coin 20 times and calculate the experimental probability of getting a head. Compare the experimental probability to the theoretical probability.

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**Probability C4 - Working with Probability**

1. What are the odds of obtaining success in each experiment?
	1. rolling a die and the number facing up is 4
	2. choosing a vowel from the letters in G-R-A-D-U-A-T-I-O-N
	3. cutting a deck of cards and getting a red card
2. Scott is laying laminate flooring. He needs 80 boards of laminate. About 15% of the boards are not usable. How many boards should Scott have available?
3. Four gyms are having contests to win a free membership. The chances of winning are different for each gym.

 Fit Bodies: 1 in 25 probability of winning

 Great Fit: 70 in 75 probability of not winning

 Life Fitness: 1 to 25 odds of winning

 World Gym: 70 to 75 odds of not winning

 Which contest gives you the greatest chance of winning?

1. A store that sells electrical receptacle plates claims that about 2% of the plates they sell arrive at the store damaged. The plates are sold in packs of 10.
	1. On average, there is approximately one damaged plate in how many packs?
	2. A customer purchases 8 packs of plates. Predict how many plates will be damaged.