Name Key

Math 304

Practice Quiz 1 – Sections 9.1 – 9.4

Show your work for full credit.

1. All the digits 0 – 9 are each placed on separate slips of paper and one is randomly selected from that collection.

a. What is the probability that an odd number is selected from that collection?
1, 3, 5, 7, 9 so five favorable
1.a. $\frac{5}{10} = \frac{1}{2}$

b. What are the odds in favor of selecting a number greater than 7?
Those digits are 8 or 9 so 2 favorable & 0 – 7 unfavorable
b. 2:8 or 1:4

2. A student claims that "if the probability of an event is ½ then there is one way the event can occur and only two elements in the sample space." How do you respond?

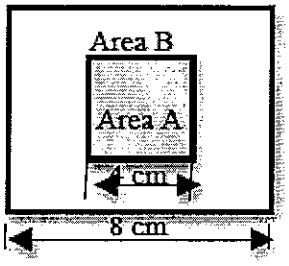
That is one way a probability can occur, but any multiple of $\frac{1}{2}$ is possible. For example the probability of rolling an even # on a die is $\frac{3}{6} = \frac{1}{2}$

3. Suppose the playoffs for a sporting event require the teams to play until one team wins 2 games.
a. What is the maximum number of games that could be played if no ties are allowed?
LWW
a. 3 games

b. Explain how a simulation could be created for this situation.

A die could be used with 1–3 a win for Team A & 4–6 a win for Team B. Roll the die until either team wins twice for each trial.

4. Consider the following mat. If a lawn dart is tossed and it hits the mat, what is the probability that it lands in the gray region?



Area of gray region $= 4^2 = 16$

Area of region B $= 8^2 = 64$

$P(\text{gray}) = \frac{16}{64} = \frac{1}{4}$

4. $\frac{1}{4}$

5. A jar contains 5 blue, 8 red, and 6 green marbles.
a. What is the probability that a marble drawn at random is blue or green?

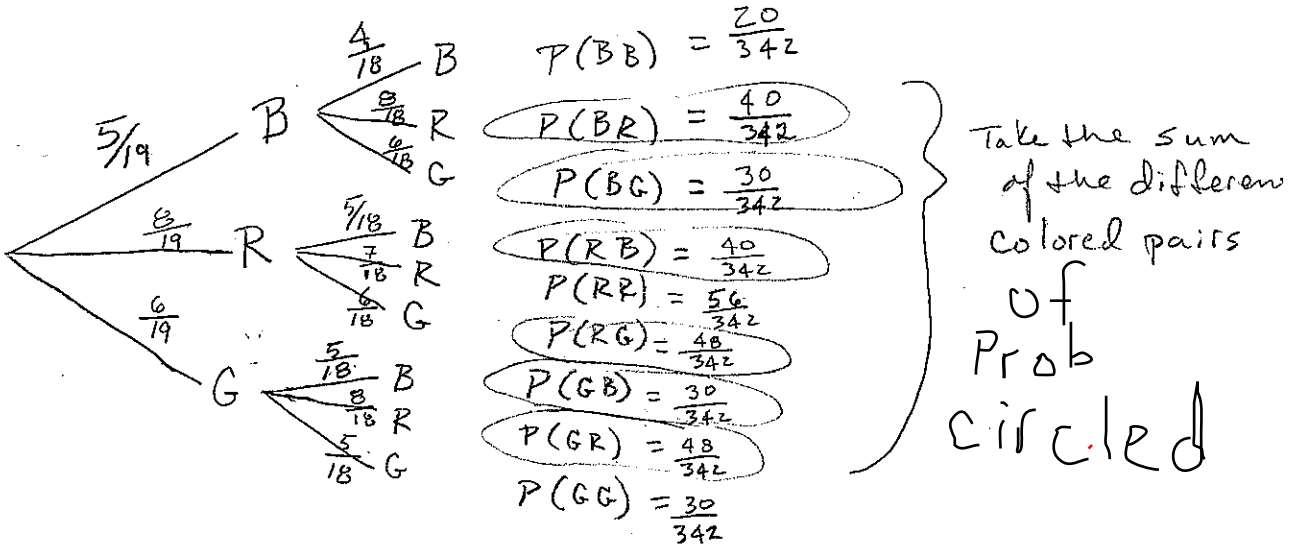
$\frac{5+6}{5+8+6} = \frac{11}{19}$

5.a. $\frac{11}{19}$

b. On back draw a tree diagram for two marbles selected without replacement to find the probability that the two marbles are of different color.

b. $\frac{234}{342} = \frac{118}{171}$

2nd Marble


5/19 B
6/19 R
6/19 G
4/18 B
8/18 R
6/18 G
5/18 B
7/18 R
6/18 G
5/18 B
8/18 R
5/18 G
P(BB) = 20/342
P(BR) = 40/342
P(BG) = 30/342
P(RB) = 40/342
P(RR) = 56/342
P(RG) = 48/342
P(GB) = 30/342
P(GR) = 48/342
P(GG) = 30/342
Take the sum of the differen colored pairs of Prob circled