

Name: KEY Period: _____ Date: _____

7th Grade Probability Test Review

1. Michaela draws cards from a stack of cards numbered one to twenty. So far she has randomly drawn cards numbered 2, 8, and 16 and has not returned them to the stack. What is the probability that Michaela's next draw is a number less than 10? Show your answer in percentage form.

1 ~~2~~ 3 4 5 6 7 ~~8~~ 9 10
 11 12 13 14 15 ~~16~~ 17 18 19 20

$$P(< 10) = \frac{7}{17} \approx 41\%$$

$$17 \overline{) 7.00} \begin{array}{r} .41 \\ \underline{68} \\ 20 \\ \underline{17} \\ 30 \\ \underline{28} \\ 20 \end{array}$$

2. Allison plays a board game with a friend. She uses a frequency table to record the results for each roll of a standard die.

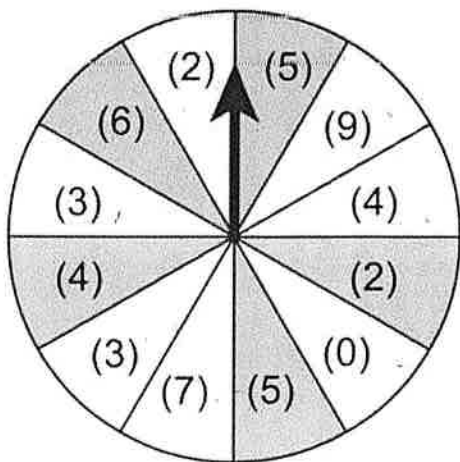
Number Rolled	Frequency
1	III
2	I
3	IIII
4	II
5	IIII
6	+ III
	18

$$P(3) = \frac{4 + 2}{18 \div 2} = \frac{2}{9}$$

Based on the data in the frequency table, is the probability of rolling a 3 on the next roll $\frac{2}{9}$? Why or why not?

YES, BASED ON THE DATA

3. The spinner below has 12 congruent sections. Mrs. Hernandez spins the spinner 50 times. The results of the number of times the spinner landed on each section are noted in the spinner shown below.



Based on the results of the first 50 spins, what is the probability that Mrs. Hernandez will spin a unshaded section on the next spin?

$$P(\text{unshaded}) = \frac{28 \div 2}{50 \div 2} = \frac{14}{25}$$

4. The table below shows the number of different colored drinking straws in a box.

Marble Color	Number
Blue	18
Yellow	20
Black	16
White	+ 14
	<u>68</u>

$$P(\text{blue}) = \frac{18 \div 2}{68 \div 2} = \frac{9}{34}$$

If a straw is drawn from the box at random, which expression can be used to determine the probability the straw selected will NOT be blue?

A. ~~$1 + \frac{9}{34}$~~

B. ~~$1 + \frac{25}{34}$~~

C. $1 - \frac{9}{34}$

D. ~~$1 - \frac{25}{34}$~~

5. Dee has a bag that includes blue, red, yellow, and green balls. She draws a ball without looking, records the results, and returns the ball to the bag. The table below shows Dee's results.

Results	Frequency
Blue ✓	20
Red ✓	25
Yellow	20
Green	15

Based on the data from the table, is Dee more likely to draw a blue or red ball?

RED

6. Winners from the Coble Middle School fund-raiser randomly select a gift card from Bag A and from Bag B. The contents of each bag are shown below.

Bag A	Bag B
5 dinner gift card	4 clothing gift card
4 DVD gift card	3 video game gift card
3 movie gift card	5 Six Flags gift card
5 Starbucks gift card	5 TV gift card

What is the probability that the first winner will randomly select a movie gift card and a video game gift card?

$$P(\text{movie, video}) = \frac{3}{17} \times \frac{3}{17} = \frac{9}{289}$$

$$\begin{array}{r} 17 \\ \times 17 \\ \hline 119 \\ + 170 \\ \hline 289 \end{array}$$

7. If you roll a six-sided cube 30 times then how many times would you expect it to land on 1?

$$\frac{1}{6} \cdot \frac{30}{1} = \frac{30}{6} = \boxed{5}$$

8. How many possible outfits would you have if you had two pairs of shoes, 3 pairs of pants, and 5 shirts?

$$2 \times 3 \times 5 = \boxed{30 \text{ outcomes}}$$

9. Macie receives a treat bag. The treat bag contains 10 Starburst, 5 Twix, 2 Snickers, and 3 bags of M&Ms. Make a detailed list of possible outcomes if Macie were to draw from the bag four times.

$$10 \times 5 \times 2 \times 3 = 300$$

300 outcomes → POSSIBLE COMBINATION

10. Evan tries to predict which sport each of his 10 friends will choose to play. His friends can choose one the following: football, basketball, baseball, or soccer. Describe a simulation that could be used to his prediction using one of the following items: a six-sided number cube, a fair coin, a spinner with four equal sections, or a deck of cards.

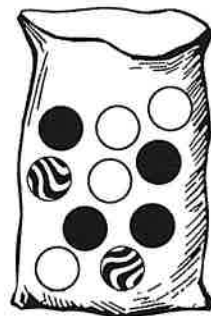
$$4 \text{ outcomes} = \boxed{\text{SPINNER}}$$

11. Mr. Bailey practices his free throw shooting every night. He attempts 50 free throws a night. After his first ten attempts, he had made 9 free throws. Based on Mr. Bailey's attempts, how many free throws could he expect to make?

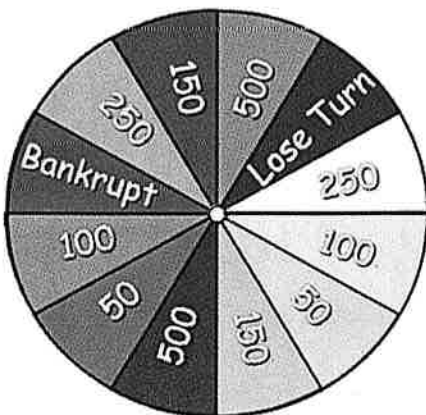
$$\frac{9}{10} \cdot \frac{50}{1} = \frac{450}{10} = \boxed{45}$$

12. What is the probability of picking a white marble and landing on heads?

$$P(\text{white, heads}) = \frac{4}{10} \times \frac{1}{2} = \frac{4 \div 4}{20 \div 4} = \boxed{\frac{1}{5}}$$



13. What is the probability of landing on a three digit number?



$$P(3 \text{ digit}) = \frac{8 \div 4}{12 \div 4} = \boxed{\frac{2}{3}}$$