Name: Key Period: _____

Math 7 Unit 7: Probability Review

1. Mr. Williams has only white and blue shirts in his closet. Without looking, Mr. Williams pulls a shirt out of this closet. The probability of pulling out a blue shirt is $\frac{1}{4}$. What is the probability that Mr. Williams pulled out a white shirt?

$\frac{4}{4} - \frac{1}{4} = \frac{3}{4}$

a. $\frac{3}{4}$ c. $\frac{1}{4}$

b. $\frac{1}{2}$ d. $\frac{4}{3}$

2. A jar contains pink, white, purple, and yellow jellybeans. The probability of choosing three of the four colors is shown in the table below. What is the probability of choosing a yellow jellybean?

Color of Jelly Bean	Probability of Choosing Color
Pink	$\frac{5}{12}$
White	$\frac{1}{3}$
Purple	$\frac{1}{6}$

a. $\frac{1}{6}$ c. $\frac{11}{12}$

b. $\frac{1}{12}$ d. $\frac{7}{21}$

$\frac{5}{12} + \frac{1}{3}_{\times 4} + \frac{1}{6}_{\times 2}$

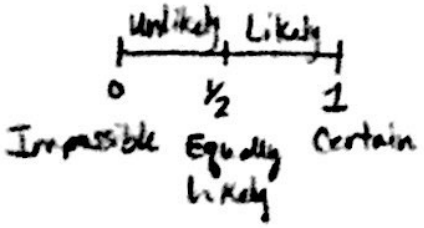
$\frac{5}{12} + \frac{4}{12} + \frac{2}{12} = \frac{11}{12}$

$\frac{12}{12} - \frac{11}{12} = \frac{1}{12}$

3. Jerry conducted a survey to determine the favorite flavor of ice cream in the 7th grade. He surveyed 40 students and found that 3 out of 4 students liked vanilla ice cream the most. If a random 7th grader was chosen from Jerry's school, what is the likelihood the student would like vanilla ice cream?

a. likely c. certain

b. unlikely d. impossible



4. There are 6 flavors of candy in a bag. The probability of randomly selecting strawberry is $\frac{6}{64}$, lime is $\frac{3}{16}$, lemon is $\frac{4}{32}$, cherry is $\frac{1}{8}$, and grape is $\frac{14}{64}$. What is the probability of randomly selecting a piece of the 6th flavor?

a. $\frac{3}{32}$ c. $\frac{43}{64}$

b. $\frac{1}{4}$ d. $\frac{101}{124}$

$\frac{6}{64} + \frac{3}{16}_{\times 4} + \frac{4}{32}_{\times 2} + \frac{1}{8}_{\times 8} + \frac{14}{64}$

$\frac{6}{64} + \frac{12}{64} + \frac{8}{64} + \frac{8}{64} + \frac{14}{64} = \frac{48}{64}$

$\frac{64}{64} - \frac{48}{64} = \frac{16}{64} = \frac{1}{4}$

5. Erica has a number cube, labeled 1 through 6. She will roll the cube 400 times. How many times should Erica expect the cube to land on the number 3?

a. 100 c. 67

b. 133 d. 200

$\frac{1}{6} = \frac{x}{400}$

$\frac{6x}{6} = \frac{400}{6}$

$x = 66.\overline{6}$

6. A computer randomly selects 3 visitors to the zoo out of every 250 visitors to win a free ticket to the zoo for another day. The zoo had 4,500 visitors this season. Which number is closest to the number of visitors who received a free ticket to the zoo this season?

a. 12 c. 83

b. 24 d. 54

$\frac{3}{250} = \frac{x}{4500}$

$\frac{250x}{250} = \frac{13500}{250}$

$x = 54$

7. Martin will roll a number cube 180 times. The number cube is labeled 1 to 6. How many times could Martin expect to roll a number greater than 2? $\frac{4}{6} = \frac{2}{3}$

a. 45 c. 60

b. 120 d. 150

$\frac{2}{3} = \frac{x}{180}$

$\frac{3x}{3} = \frac{360}{3}$

$x = 120$

8. A bag contains 6 blue chips, 3 red chips, 9 green chips, and 2 yellow chips. John pulls a chip out, records the colors, and returns the chip to the bag. He does this 300 times. How many times should John expect the color to be blue, red or green?

6+3+9+2 = 20

a. 90
c. 270
b. 45
d. 165

6+3+9 = 18

$\frac{18}{20} = \frac{9}{10}$ $\frac{9}{10} \times \frac{30}{30} = \frac{x}{300}$ $x = 270$

9. Claire rolled a number cube with sides labeled 1 through 6. What is the probability Claire rolled an odd number?

$\frac{3}{6} = \frac{1}{2}$

a. $\frac{1}{2}$
c. $\frac{1}{6}$
b. $\frac{1}{3}$
d. $\frac{1}{10}$

10. A bag contains 3 red balloons, 2 purple balloons, 4 yellow balloons, 2 pink balloons, and 1 brown balloon. Without looking, Melissa pulls out a balloon. What is the probability Melissa pulls out a pink or yellow balloon?

3+2+4+2+1 = 12 4+2 = 6

a. 50%
c. 25%
b. 17%
d. 40%

$\frac{6}{12} = 50\%$

11. Each letter in the word *mathematical* is written on cards of equal size and shape and placed in a jar. If one card is randomly selected, what is the probability it has the letter *t* on it?

a. $\frac{1}{5}$
c. $\frac{1}{6}$
b. $\frac{1}{3}$
d. $\frac{1}{12}$

$\frac{2}{12} = \frac{1}{6}$

12. Mr. Martinez has 4 blue shirts, 5 white shirts, and 7 gray shirts. He will randomly choose a shirt to wear. What is the probability the shirt Mr. Martinez chooses will be blue?

4+5+7 = 16

a. $\frac{3}{4}$
c. $\frac{1}{3}$
b. $\frac{1}{4}$
d. $\frac{1}{16}$

$\frac{4}{16} = \frac{1}{4}$

13. For question 13: A computer recorded this table of frequency data for a four-colored spinner.

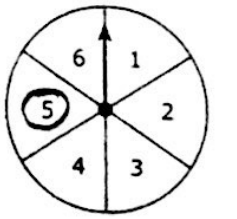
Spinner Data

Color	Frequency
Red	67
Yellow	42
Green	?
Blue	25

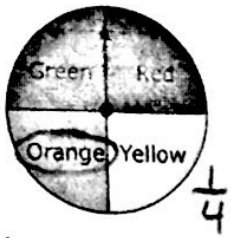
The outcome that the spinner landed on green appeared to be equally likely as the outcome that the spinner landed on red. Which is closest to the frequency that the spinner landed on green?

a. 64
c. 25
b. 38
d. 17

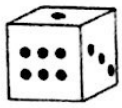
14. What is the probability of spinning a 5 on the first spinner, the color orange on the second spinner, and rolling an odd number on a fair number cube?



$\frac{1}{6}$



$\frac{1}{4}$



$\frac{3}{6} = \frac{1}{2}$

a. $\frac{11}{12}$
c. $\frac{1}{24}$
b. $\frac{1}{16}$
d. $\frac{1}{48}$

$\frac{1}{6} \cdot \frac{1}{4} \cdot \frac{1}{2} = \frac{1}{48}$

15. Moesha has 4 dresses, 3 hats, and 5 pairs of shoes. She will choose an outfit that has one dress, one hat, and one pair of shoes. How many different outfits are possible?

a. 12
c. 60
b. 3
d. 45

$4 \cdot 3 \cdot 5 = 60$

16. The distance traveled by a car is $246\frac{1}{2}$ miles in $4\frac{1}{4}$ hours. What is the speed of the car in miles per hour?

$\frac{mi}{h}$ $\frac{246.5\,mi}{4.25\,h} = \frac{x\,mi}{1\,h}$

$\frac{4.25x}{4.25} = \frac{246.5}{4.25}$

$x = 58$

17. The deepest part of Death Valley in California is -285 feet. In the nearby mountains, the highest mountain is 14,483 feet. What is the elevation difference between the two points?

14,483 } 14483

0

-285 } +285

14,768 ft

18. A computer programmer charges $75 an hour for work and pays $1125 a month in rent office rental space. Write an inequality that shows the programmer paying rent and earning no less than $4200 a month in profit.

income

expense

$75x - 1125 \geq 4200$

$+1125 \quad +1125$

$\frac{75x}{75} \geq \frac{5325}{75}$

$x \geq 71$

19. Solve and draw an inequality along a number line that fits this statement: 8 less than twice a negative number is greater than or equal to 28.

$-2x - 8 \geq 28$

$+8 \quad +8$

$\frac{-2x}{-2} \geq \frac{36}{-2}$

$x \leq -18$

*flip the sign when mult/divid by a negative.

20. With $165 to spend, I have already bought 3 pair of pants and a coat, but I still need to buy 2 shirts. The pants were $28, $22 and $26 each, and the coat was $62. I spent the remaining money on the 2 shirts, which were the same cost each. How much was each shirt?

$28+22+26+62+2x = 165$

$138 + 2x = 165$

$-138 \quad -138$

$\frac{2x}{2} = \frac{27}{2}$

$x = \$13.50$