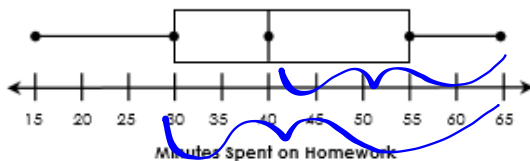


Complete the Warm up in Google Classroom

Record your answers on the doc OR on back of notebook
p 39, do not turn it in

1. The box and whisker plot represents the time spent on homework by a group of college students. Give the number summary, then answer the questions below.



Minimum: 15
 Lower Quartile: 30
 Median: 40
 Upper Quartile: 55
 Maximum: 65

a) What is the range?

$$65 - 15 = 50$$

b) What is the interquartile range?

$$55 - 30 = 25$$

c) What percent of college students spent more than 40 minutes on homework?

50%

d) What percent of the students spent between 30 and 65 minutes on homework?

75%

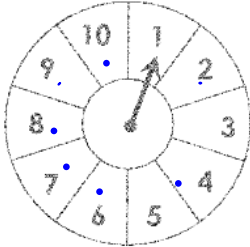
e) Does the data vary more above or below the median?

<p>MORE PRACTICE</p>	<p>5. The ages of the teachers at Carter Middle School is shown below.</p> <p style="text-align: center;">Ages of Teachers</p>	<p>a) What is the median age?</p> <p style="text-align: center;">46</p>
	<p>b) What is the interquartile range?</p> <p style="text-align: center;">$54 - 30 = \boxed{24}$</p>	<p>c) What percent of the teachers are at least 30 years old?</p> <p style="text-align: center;">75%</p>
	<p>6. The 400-meter run times in a girls' track meet are shown below.</p> <p style="text-align: center;">Running Time (seconds)</p>	<p>a) Identify the minimum and maximum run times.</p> <p style="text-align: center;">min: 58 + max: 70</p>
<p>b) What percent of the runners had a time between 63 and 70 seconds?</p> <p style="text-align: center;">50%</p>	<p>c) What percent of the runners had a time of at most 60 seconds?</p> <p style="text-align: center;">25%</p>	
<p>Comparing BOX-AND-WHISKER Plots</p>	<p>7. The wingspan of the birds at the zoo's birds of prey exhibit are shown below.</p> <p style="text-align: center;">Wingspan (inches)</p>	<p>a) Identify the lower and upper quartiles.</p> <p style="text-align: center;">LQ: 32 UQ: 44</p>
	<p>b) What percent of the birds have a wingspan of no more than three feet?</p> <p style="text-align: center;">50%</p>	<p>c) In which quartile do the data values vary the least?</p> <p style="text-align: center;">2nd</p>
	<p>8. The Tigers and Brewers are rival baseball teams. The box-and-whisker plot below shows the number of runs scored by the players on each of these teams last season.</p> <p style="text-align: center;">Brewers</p> <p style="text-align: center;">Tigers</p>	<p>a) Which team has the greater range of runs scored by the players?</p> <p style="text-align: center;">Tigers</p>
		<p>b) Based on runs, which team has a stronger group of players? Explain your reasoning.</p> <p style="text-align: center;">Brewers; they are more consistent than the Tigers.</p>

Name:		Date:
Topic:		Class:
Main Ideas/Questions	Notes/Examples	
EXPERIMENT	<p>A procedure with varying results</p> <p>Example: rolling a die</p>	
OUTCOME	<p>A possible result from the experiment</p> <p>Example: 4</p>	
SAMPLE SPACE	<p>The set of all possible outcomes</p> <p>Example: {1, 2, 3, 4, 5, 6}</p>	
EVENT	<p>A certain desired outcome</p> <p>Example: Rolling an odd number</p>	
FAVORABLE OUTCOMES	<p>All possible outcome for an event</p> <p>Example: {1, 3, 5}</p>	
<p>Identifying Outcomes</p>	<p>1. A letter from the word BASKETBALL is chosen at random. List the possible outcomes.</p>	<p>List the favorable outcomes for:</p> <p>a) choosing K K</p> <p>b) not choosing B ASKETALL</p> <p>c) choosing an T or a L TLL</p> <p>d) choosing a vowel AEA</p>
	<p>2. The spinner to the left is spun once. List the possible outcomes.</p>	<p>List the favorable outcomes for:</p> <p>a) spinning an even number 2 4 6 8 10 12</p> <p>b) spinning a number greater than 10 11 12</p> <p>c) spinning a number that is at most 5 1 2 3 4 5</p> <p>d) spinning a prime number 2 3 5 7 11</p>



1 → 12

Name:		Date:	
Topic:		Class:	
Main Ideas/Questions	Notes/Examples		
PROBABILITY	<ul style="list-style-type: none"> Probability is a measure of the <u>chance</u> that a specific <u>event</u> will occur. Probabilities have values between <u>0</u> and <u>1</u>. An event that is impossible has a probability of <u>0</u>. An event that is certain to occur has a probability of <u>1</u>. 		
FINDING PROBABILITY	<p>When all outcomes are equally likely, the probability of an event, $P(\text{event})$, is the ratio of the number of favorable outcomes to the total number of outcomes.</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> $P(\text{event}) = \frac{\text{number of favorable outcomes}}{\text{number of total outcomes}}$ </div> <p>Probabilities can be written as fractions, decimals, or percent!</p>		
EXAMPLES	<p>Directions: Find each probability as a <u>fraction</u> (in simplest form), <u>decimal</u>, and <u>percent</u>.</p> <p>1. The spinner below is spun once.</p> <div style="display: flex; align-items: center;">  <div style="margin-left: 20px;"> <p>a) $P(\text{odd})$ $\frac{5}{10}$ $\frac{1}{2}$.5 50%</p> <p>b) $P(\text{multiple of 4})$ $\frac{2}{10}$ $\frac{1}{5}$.2 20%</p> <p>c) $P(\text{prime number})$ $\frac{4}{10}$ $\frac{2}{5}$.4 40%</p> <p>d) $P(\text{even or greater than 5})$ $\frac{7}{10}$.7 70%</p> </div> </div> <p>2. A letter from the word ACCELERATION is chosen at random.</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p>(12)</p> </div> <div> <p>a) $P(R)$ $\frac{1}{12}$.08$\bar{3}$ 8.3%</p> <p>b) $P(C)$ $\frac{2}{12}$ $\frac{1}{6}$.1$\bar{6}$ 16.6%</p> <p>c) $P(\text{not a vowel})$ $\frac{6}{12}$ $\frac{1}{2}$.5 50%</p> <p>d) $P(L, R, \text{ or } A)$ $\frac{1}{3}$.3 33.3%</p> </div> </div>		

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Name:	Date:
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Topic:	Class:
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Main Ideas/Questions	Notes/Examples
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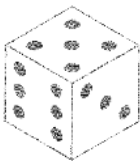
THEORETICAL PROBABILITY
 The probability that a desired outcome will occur
 Example:
 If tossing a coin, the probability of it landing on heads is $\frac{1}{2}$ 50%

EXPERIMENTAL PROBABILITY
 The probability of a desired outcome based on trials in an experiment
 Example:
 A coin was tossed 100 times. Heads appeared 60 times. Therefore, the probability of the coin landing on heads on the next toss is $\frac{60}{100}$ or $\frac{3}{5}$ 60%

THEORETICAL VS. EXPERIMENTAL PROBABILITY

Roll a standard die 60 times and record the results in the table below:


Result	1	2	3	4	5	6
Frequency						



Answer each question based on theoretical probability and experimental probability using your results.

$\frac{1}{6}$ $\frac{16.6}{100}$

	Theoretical Probability	Experimental Probability
1. What is the probability that the next roll is an odd number?	$\frac{1}{2}$	$\frac{\quad}{60}$
2. What is the probability that the next roll is a 1 or a 4?	$\frac{2}{6}$ $\frac{1}{3}$	
3. What is the probability of the next roll is at least 2?	$\frac{5}{6}$	
4. Out of 100 rolls, about how many times would you expect to roll a 3?	16	
5. Do the theoretical results match the experimental results?		
6. How could the experimental results get closer to the theoretical results?		

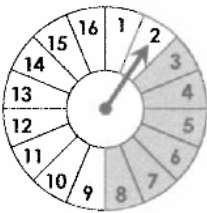
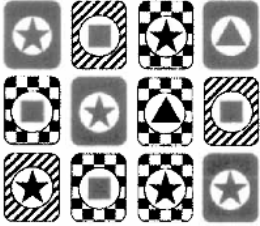
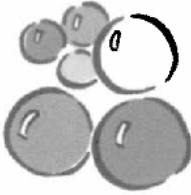
<p>MORE EXAMPLES</p>	<p>7. A letter in the word ACCEL is chosen 50 times. Results are shown in the table below.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Result</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>14</td> </tr> <tr> <td>C</td> <td>5</td> </tr> <tr> <td>C</td> <td>7</td> </tr> <tr> <td>E</td> <td>15</td> </tr> <tr> <td>L</td> <td>9</td> </tr> </tbody> </table>	Result	Frequency	A	14	C	5	C	7	E	15	L	9	<p>a) What is the theoretical probability of choosing a C?</p> <p style="text-align: center;">$\frac{2}{5}$ 40%</p>				
	Result	Frequency																
A	14																	
C	5																	
C	7																	
E	15																	
L	9																	
<p>b) What is the experimental probability of choosing a C? Compare this to the theoretical probability.</p> <p style="text-align: center;">$\frac{12}{50}$ 24%</p>																		
<p>USING SAMPLES TO PREDICT</p>	<p>8. The spinner to the left is spun 80 times. Results are shown in the table below.</p>  <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Result</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>Stripes</td> <td>27</td> </tr> <tr> <td>Polka Dots</td> <td>18</td> </tr> <tr> <td>Solid</td> <td>35</td> </tr> </tbody> </table>	Result	Frequency	Stripes	27	Polka Dots	18	Solid	35	<p>a) What is the theoretical probability of the spinner not landing on polka dots?</p> <p>b) What is the experimental probability of the spinner not landing on polka dots? Compare this to the theoretical probability.</p>								
	Result	Frequency																
Stripes	27																	
Polka Dots	18																	
Solid	35																	
<p>USING SAMPLES TO PREDICT</p>	<p>9. A day of the week is chosen at random 40 times. Results are shown in the table below.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Result</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>Sunday</td> <td>3</td> </tr> <tr> <td>Monday</td> <td>12</td> </tr> <tr> <td>Tuesday</td> <td>2</td> </tr> <tr> <td>Wednesday</td> <td>10</td> </tr> <tr> <td>Thursday</td> <td>8</td> </tr> <tr> <td>Friday</td> <td>1</td> </tr> <tr> <td>Saturday</td> <td>4</td> </tr> </tbody> </table>	Result	Frequency	Sunday	3	Monday	12	Tuesday	2	Wednesday	10	Thursday	8	Friday	1	Saturday	4	<p>a) Theoretically, if a day of the week is chosen 150 times, how many times would you expect a day that starts with the letter T?</p> <p>b) Based on the experiment, if a day of the week is chosen 150 times, how many times would you expect a day that starts with the letter T?</p>
	Result	Frequency																
Sunday	3																	
Monday	12																	
Tuesday	2																	
Wednesday	10																	
Thursday	8																	
Friday	1																	
Saturday	4																	
<p>USING SAMPLES TO PREDICT</p>	<p>10. A small deck of cards has 4 kings, 3 queens, 2 jacks, and 1 ace. Eli chooses one card at random 75 times and records his results in the table below.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Result</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>King</td> <td>27</td> </tr> <tr> <td>Queen</td> <td>20</td> </tr> <tr> <td>Jack</td> <td>16</td> </tr> <tr> <td>Ace</td> <td>12</td> </tr> </tbody> </table>	Result	Frequency	King	27	Queen	20	Jack	16	Ace	12	<p>a) Theoretically, how many times would you expect to draw an ace out of 200 draws?</p> <p>b) Based on Eli's experiment, how many times would you expect to draw an ace out of 200 draws?</p>						
	Result	Frequency																
King	27																	
Queen	20																	
Jack	16																	
Ace	12																	

Why Did the Teacher Jump in the Pool?

Directions: Find each probability. After completing each set, find matching answers between Column 1 and Column 2. One will have a letter and the other a number.

Write the letter in the matching numbered box at the bottom of the page.

homework

		COLUMN 1	COLUMN 2
SET 1	<p>The spinner below is spun once.</p> 	T $P(\text{even})$	9 $P(\text{unshaded})$
		E $P(\text{at least } 7)$	7 $P(\text{10 or a multiple of } 3)$
		T $P(\text{prime})$	2 $P(\text{shaded and at most } 4)$
		O $P(\text{multiple of } 5 \text{ and odd})$	12 $P(\text{less than } 9)$
SET 2	<p>The set of cards below has 3 background styles (solid, stripes, and checkered) and 3 shapes (stars, squares, and triangles). One card is chosen at random.</p> 	W $P(\text{stripes})$	6 $P(\text{a triangle})$
		T $P(\text{a star})$	10 $P(\text{solid and a star})$
		R $P(\text{solid or checkered})$	1 $P(\text{a square or a triangle})$
		T $P(\text{checkered and a square})$	4 $P(\text{stripes and a star})$
		E $P(\text{solid and a triangle})$	14 $P(\text{checkered or a star})$
SET 3	<p>There are 2 blue, 6 yellow, 10 red, and 3 green, 5 orange, and 4 purple marbles in a jar. One marble is chosen at random.</p> 	S $P(\text{red})$	11 $P(\text{orange})$
		E $P(\text{red, yellow, or purple})$	3 $P(\text{yellow})$
		A $P(\text{green or blue})$	13 $P(\text{not red})$
		H $P(\text{orange, purple, or yellow})$	5 $P(\text{purple or yellow})$
		T $P(\text{blue or purple})$	8 $P(\text{blue, red, or green})$

ANSWER:

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	!
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