

Name: _____

Identifying Possibilities

In this unit, we're working with probability—measuring how likely it is that something will happen or not happen. At its core, probability is about comparing possibilities. If you flip a coin, there are two total possibilities: heads or tails. There is one possibility out of two that the coin will land heads-up. That is probability. Before you can solve anything involving probability, you need to be able to identify all of the *possibilities*. That is what you are working on today.

Determine the number of *possibilities*.

<p>1.</p> <div style="text-align: center;">  </div> <p>Total possibilities: _____</p> <p>Even possibilities: _____</p> <p>#2 possibilities: _____</p> <p>2 or even possibilities: _____</p>	<p>2.</p> <div style="text-align: center;">  </div> <p>Total possibilities: _____</p> <p>Number Possibilities: _____</p> <p>Letter possibilities: _____</p> <p>Blank possibilities: _____</p>	<p>3.</p> <div style="text-align: center;">  </div> <p>Total possibilities: _____</p> <p>Even Possibilities: _____</p> <p>Odd possibilities: _____</p> <p>Odd or even possibilities: _____</p>
<p>4. At the zoo, there are 3 tigers, 4 lions, 5 zebras and 3 giraffes.</p> <p>Total possibilities: _____</p> <p>Tiger possibilities: _____</p> <p>Cat possibilities: _____</p> <p>Tiger or cat possibilities: _____</p>	<p>5. In a traditional deck of cards, all of the cards are either red or black. There are 26 black cards and 26 red cards.</p> <p>Total possibilities: _____</p> <p>Black possibilities: _____</p> <p>Red possibilities: _____</p> <p>Purple possibilities: _____</p>	<p>6. A beach ball has two panels of each of the following colors: red, blue, green and yellow. There are no other colors.</p> <p>Total possibilities: _____</p> <p>Green possibilities: _____</p> <p>Blue possibilities: _____</p> <p>Blue or green possibilities: _____</p>
<p>7. A bag has 18 marbles. There are 5 clear, 2 black, and 7 red marbles. The rest are green.</p> <p>Total possibilities: _____</p> <p>Red possibilities: _____</p> <p>Clear possibilities: _____</p> <p>Not red or clear possibilities: _____</p>	<p>8. In a class, there are 3 sophomore boys, 8 junior boys, 6 sophomore girls, and 12 junior girls.</p> <p>Total possibilities: _____</p> <p>Girl possibilities: _____</p> <p>Junior possibilities: _____</p> <p>Girl or junior possibilities: _____</p>	<p>9. On a playlist, there are 24 songs. 14 of them are hip-hop, 6 are rap, and the rest are opera.</p> <p>Total possibilities: _____</p> <p>Rap possibilities: _____</p> <p>Hip-hop possibilities: _____</p> <p>Not opera possibilities: _____</p>
<p>10. Julie had 2 math handouts, 3 English assignments and a History paper in her folder before she turned in 1 English assignment during 1st period. Her English assignment was not returned to her.</p> <p>Total possibilities: _____</p> <p>Math possibilities: _____</p> <p>English possibilities: _____</p> <p>Math or English possibilities: _____</p>	<p>11. Frank had 8 math handouts, 2 Science labs and 4 English notes in her folder before she turned one math handout during 3rd period. The handout was returned before the end of class.</p> <p>Total possibilities: _____</p> <p>Math possibilities: _____</p> <p>English possibilities: _____</p> <p>Math or English possibilities: _____</p>	<p>12. In a drawer, there are 7 pairs of white socks, 3 pairs of black socks, and one pair of black gloves.</p> <p>Total possibilities: _____</p> <p>Black possibilities: _____</p> <p>Sock possibilities: _____</p> <p>Black or sock possibilities: _____</p>

Probability is about *comparing possibilities*. It is when you show the relationship between the possibility of what you want and the total number of possibilities. The most common ways to express probability are:

Fractions,	Decimals,	& Percents
$\frac{\text{possibility of what's asked for}}{\text{total number of possibilities}}$ <p>(simplify as much as possible)</p>	$\frac{\text{asked for possibilities}}{\text{total possibilities}}$	<p>Multiply the decimal by 100 to determine the percent</p>

You have already determined the number of possibilities for each problem below (see previous problems). Determine the probabilities.

<p>13.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>3</td><td>A</td><td>5</td></tr> <tr><td>G</td><td>6</td><td></td></tr> </table> <p><u>Probability of a number:</u> As a fraction → (wanted poss./total)</p> <p>As a decimal to the thousandth →</p> <p>As a percent to the tenth →</p>	3	A	5	G	6		<p>14.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>3</td><td>A</td><td>5</td></tr> <tr><td>G</td><td>6</td><td></td></tr> </table> <p><u>Probability of a letter:</u> As a fraction → (wanted poss./total)</p> <p>As a decimal to the thousandth →</p> <p>As a percent to the tenth →</p>	3	A	5	G	6		<p>15.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>3</td><td>A</td><td>5</td></tr> <tr><td>G</td><td>6</td><td></td></tr> </table> <p><u>Probability of a blank:</u> As a fraction → (wanted poss./total)</p> <p>As a decimal to the thousandth →</p> <p>As a percent to the tenth →</p>	3	A	5	G	6	
3	A	5																		
G	6																			
3	A	5																		
G	6																			
3	A	5																		
G	6																			
<p>16. At the zoo, there are 3 tigers, 4 lions, 5 zebras and 3 giraffes.</p> <p><u>Probability of a tiger:</u> As a fraction →</p> <p>As a decimal to the thousandth →</p> <p>As a percent to the tenth →</p>	<p>17. At the zoo, there are 3 tigers, 4 lions, 5 zebras and 3 giraffes.</p> <p><u>Probability of a cat:</u> As a fraction →</p> <p>As a decimal to the thousandth →</p> <p>As a percent to the tenth →</p>	<p>18. At the zoo, there are 3 tigers, 4 lions, 5 zebras and 3 giraffes.</p> <p><u>Probability of a tiger or cat:</u> As a fraction →</p> <p>As a decimal to the thousandth →</p> <p>As a percent to the tenth →</p>																		
<p>19. A bag has 18 marbles. There are 5 clear, 2 black, and 7 red marbles. The rest are green.</p> <p><u>Probability of a red:</u> As a fraction →</p> <p>As a decimal to the thousandth →</p> <p>As a percent to the tenth →</p>	<p>20. A bag has 18 marbles. There are 5 clear, 2 black, and 7 red marbles. The rest are green.</p> <p><u>Probability of a clear:</u> As a fraction →</p> <p>As a decimal to the thousandth →</p> <p>As a percent to the tenth →</p>	<p>21. A bag has 18 marbles. There are 5 clear, 2 black, and 7 red marbles. The rest are green.</p> <p><u>Probability of not red or clear:</u> As a fraction →</p> <p>As a decimal to the thousandth →</p> <p>As a percent to the tenth →</p>																		