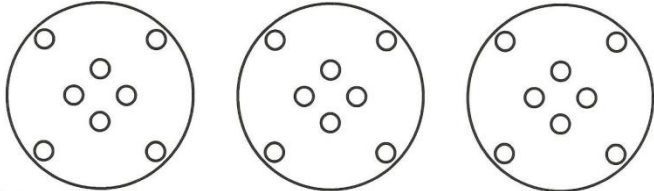
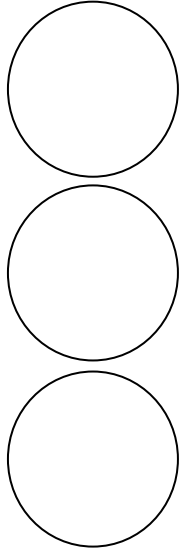

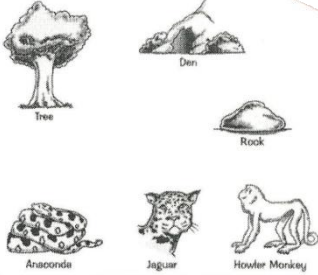
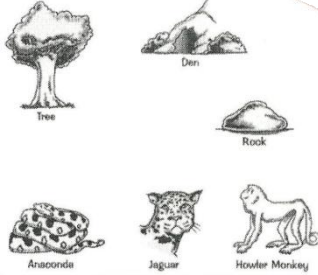
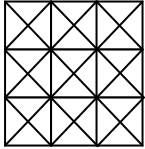
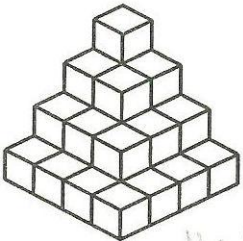
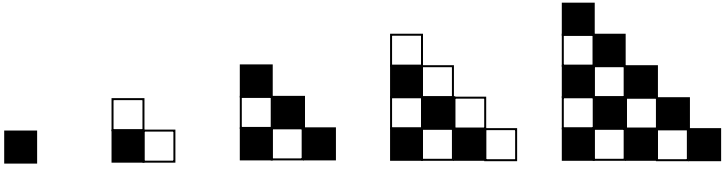
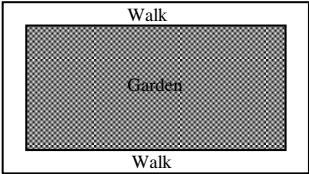


## 8<sup>th</sup> grade Team Bowl

1.	<p>Each of the lists below groups letters according to a certain rule. Your challenge is to determine the letters that come next in the sequence.</p> <ol style="list-style-type: none"> <li>1. J, F, M, A, M, J, J, A, S, __, __, __</li> <li>2. T, N, E, S, S, F, F, T, __, __</li> <li>3. F, T, F, T, T, T, T, F, F, F, F, __, __</li> </ol>	<p>1. 1- _____            2- _____            3- _____</p>																
2.	<p>The figure below is a “magic square” with missing entries. When complete, the sum of the four entries in each column, each row, and each diagonal is the same. Find the value of <i>A</i> and the value of <i>B</i>.</p> <table border="1" style="margin: 10px auto; border-collapse: collapse; text-align: center;"> <tbody> <tr> <td style="padding: 5px;"><i>A</i></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">7</td> <td style="padding: 5px;">12</td> </tr> <tr> <td style="padding: 5px;"></td> <td style="padding: 5px;">4</td> <td style="padding: 5px;">9</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;"></td> <td style="padding: 5px;">5</td> <td style="padding: 5px;">16</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;">8</td> <td style="padding: 5px;">11</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"><i>B</i></td> </tr> </tbody> </table>	<i>A</i>		7	12		4	9			5	16		8	11		<i>B</i>	<p>2. <i>A</i>= _____  <i>B</i>= _____</p>
<i>A</i>		7	12															
	4	9																
	5	16																
8	11		<i>B</i>															
3.	<p>There are 4 separate large boxes, and inside each large box there are 3 separate small boxes, and inside each of these small boxes there are 2 separate smaller boxes. How many boxes, counting all sizes, are there altogether?</p>	<p>3. _____</p>																
4.	<p>In the multiplication problem below, <i>A</i> and <i>B</i> stand for different digits. Find <i>A</i> and <i>B</i>.</p> $  \begin{array}{r}  \phantom{0}A B \\  \times \phantom{0}B A \\  \hline  114 \\  304\phantom{0} \\  \hline  3154  \end{array}  $	<p>4. <i>A</i>= _____  <i>B</i>= _____</p>																

5.	<p>Mike, Ike, and Spike are three friends who put their money together to buy three Red Sox Tickets. Together Mike and Ike have \$94. Ike has twice as much as Spike. Mike has \$13 more than Spike. If the tickets cost \$50 each, how many more dollars do they need?</p>	5. \$ _____
6.	<p>Four friends at a Valentine’s party get a cookie with 8 candies arranged on top in a geometric pattern. They need to divide the cookie into four equal pieces. Each piece must have two candies. The candies may not be cut. Your task in this puzzle is to show the four friends how to do this. Draw in lines on the pictures below to show where to cut the cookies. Try to find all three solutions.</p> 	<p>6.</p> 
7.	<p>Twenty-four meters of fencing is used to fence a rectangular garden. Let <math>M</math> represents the number of square meters in the area of the garden. What is the largest value that <math>M</math> could have?</p>	7. $M =$ _____
8.	<p>The puzzle pictured consists of three identical cubes which may be twisted until each vertical face is a single color. What color is the face marked “?”?</p> 	8. ? = _____

<p>9.</p>	<p>The anaconda, the jaguar, and the howler monkey all live in the same part of the rainforest. As long as none of them cross paths, everyone stays happy. Show how the anaconda can get to its rock, the jaguar can get to its den, and the monkey can get to its tree without any of the paths crossing.</p> 	<p>9.</p> 
<p>10.</p>	<p>Study the figure below. How many squares are in the figure?</p> 	<p>10. _____ squares</p>
<p>11.</p>	<p>How many different four-digit numbers can be made by using each of the digits 0, 3, 5 and 8 exactly once?</p>	<p>11. _____</p>
<p>12.</p>	<p>The tower below has no gaps. Suppose it is painted red on all exterior sides including the bottom, and then cut into cubes along the indicated lines. How many cubes will each have red paint on just three faces?</p> 	<p>12. _____</p>

13.	<p>A restaurant has a total of 30 tables which are of two types. The first type seats two people at each table; the second type seats five people at each table. A total of 81 people are seated when all seats are occupied. How many tables for two are there?</p>	13. _____
14.	<p>The first five stages of a sequence are shown below. If the pattern continues, how many shaded squares will there be in the 17<sup>th</sup> stage?</p> <div style="text-align: center;">  <p>1<sup>st</sup> Stage    2<sup>nd</sup> Stage    3<sup>rd</sup> Stage    4<sup>th</sup> Stage    5<sup>th</sup> Stage</p> </div>	14. _____
15.	<p>A rectangular garden is 14 ft. by 21 ft. and is bordered by a concrete walk 3 ft. wide as shown. How many square feet are in the surface area of just the concrete walk?</p> <div style="text-align: center;">  </div>	15. _____ ft <sup>2</sup>
16.	<p>There are a number of children standing around in a circle. If each child is evenly spaced apart, and the fifth child is directly opposite the eighteenth child, how many children are standing in the circle?</p>	16. _____

<p>17.</p>	<p>Mr. Dove, Mrs. Wren, Ms. Tern, Ms. Hawks and Mr. Pelican are ornithologists (people who study birds). They each have a favorite bird they like to watch. No two have the same favorite. The birds are orioles, robins, sparrows, blue jays and hummingbirds. Use the information below to find each person's favorite bird. Fill in the chart once you have determined the match between person and bird.</p> <ol style="list-style-type: none"> <li>Mr. Dove and the person who watches blue jays are good friends.</li> <li>Either Mrs. Wren or Ms. Tern watches the sparrows.</li> <li>Ms. Hawks likes robins less than orioles- her favorite.</li> <li>Mr. Pelican and Mrs. Wren do not watch the blue jays or the robins.</li> </ol>	<p>17.</p> <table border="1"> <tr> <td>Mr. Dove</td> <td></td> </tr> <tr> <td>Mrs. Wren</td> <td></td> </tr> <tr> <td>Ms. Tern</td> <td></td> </tr> <tr> <td>Ms. Hawks</td> <td></td> </tr> <tr> <td>Mr. Pelican</td> <td></td> </tr> </table>	Mr. Dove		Mrs. Wren		Ms. Tern		Ms. Hawks		Mr. Pelican	
Mr. Dove												
Mrs. Wren												
Ms. Tern												
Ms. Hawks												
Mr. Pelican												
<p>18.</p>	<p>Each of the three diagrams below shows a balance of weights using different objects. How many <math>\square</math> s will balance a <math>\bigcirc</math>?</p>	<p>18. <math>\square = \bigcirc</math></p>										
<p>19.</p>	<p>An ice cream stand has nine different flavors. A group of children come to the stand and each buys a double scoop cone with two flavors of ice cream. If none of the children choose the same combination of flavors, and every different combination of flavors is chosen, how many children are there?</p> <p>FLAVORS</p> <ol style="list-style-type: none"> <li>Vanilla</li> <li>Maple</li> <li>Chocolate</li> <li>Tiger</li> <li>Raspberry</li> <li>Strawberry</li> <li>Coffee</li> <li>Moon Mist</li> <li>Cherry Vanilla</li> </ol>	<p>19. _____</p>										

20.	Using each of the digits 2 through 9, one per square, what is the maximum value of the following expression? $\begin{array}{cccc} \square & \square & \square & \square \\ \square & \square & \times & \square & \square \end{array} +$	20. _____
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