



MATHEMATICS WITHOUT BORDERS
WINTER ROUND 2019
AGE GROUP 1

Age Group: *Full name:*.....

School:.....

City: *Country:*

INSTRUCTIONS




















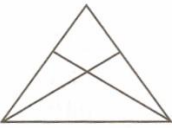









1. Please do not open the test before receiving permission by the exams officer.
2. The test contains 20 problems with an open-ended answer, which you must












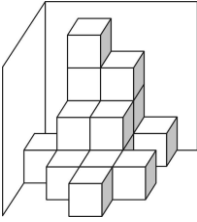











write down under the symbol




















3. You will get 2 points for each correct answer.
4. You have 60 minutes to complete the test.
5. Please do NOT take the tests and draft papers out of the room.
6. Receiving help from the exams officer or anyone else during the contest is NOT allowed.

WE WISH YOU ALL SUCCESS!

1	 $11 + \square = 13 - \Delta$	 $\square + \Delta = ?$	
2	 $\begin{array}{r} 15 + \Delta \\ \underline{19} + \bullet \\ 20 \end{array}$	 $\Delta - \bullet = ?$	
3	 $\rightarrow - 3$ $\rightsquigarrow + 1$ $7 \rightarrow \circ \rightsquigarrow \Delta \rightsquigarrow \bullet$	 $\circ + \Delta - \bullet = ?$	
4	 1, 1, 2, 3, 5, ♥, 13, 21	 ♥ = ?	
5	 $5 > \square > 3 > \Delta > 1$	 $< > =$ $\square - \Delta ? 2$	
6	 20, 18, 16, ?, 12, 10, 8, 6	 ?	
7	 	 $\Delta = ?$ Count the number of triangles.	
8	  $\frac{1 \text{ sparrow}}{2 \text{ feet}}$	 $\frac{? \text{ sparrows}}{8 \text{ feet}}$	
9	 $19 + \square = 27 - \square$	 $\square = ?$	

<p>10</p>	 <p> $23 - 3 = 20$ $1 + 13 - 7 + 9 = 16$ $1 + 13 + 7 + 9 = 30$ </p>	 <p>Which is the correct sum?</p>	 <p>.....</p>
<p>11</p>	 <p>Choose three of the numbers 1, 2, 4, 5 and 10, in order for the following expression to be correct: $\Delta - \blacksquare = \circ$.</p>	 <p>$\Delta + \blacksquare + \circ = ?$</p>	 <p>.....</p>
<p>12</p>	 <p>You can see 11 dots on the following die.</p> 	 <p>How many dots are NOT visible on the die?</p>	 <p>.....</p>
<p>13</p>	  <p>There are 16 cubes in total.</p>	 <p>How many of the cubes are not visible?</p>	 <p>.....</p>
<p>14</p>	 <p> $16 \xrightarrow{+\heartsuit} 21 \xrightarrow{-\bullet} 15 + \heartsuit$ </p>	 <p>$\bullet = ?$</p>	 <p>.....</p>
<p>15</p>	 <p>2 numbers are added. One of the numbers is 2 more than the other number. Their sum is 10.</p>	 <p>What is the smallest of the 2 numbers that has been added?</p>	 <p>.....</p>
<p>16</p>	 <p>9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20</p>	 <p>How many digits 1 have been used to write the numbers from 9 to 20?</p>	 <p>.....</p>

<p>17</p>	   <p>This four-leaf clover is found in two rectangles.</p>	   <p>In how many rectangles is there a four-leaf clover in this example?</p>	 <p>....</p>
<p>18</p>	 <p>There are 4 doors and 4 keys.</p> 	 <p>At least how attempts should I make in order to match each of the keys with each of the doors? It is not necessary to open the door.</p>	 <p>....</p>
<p>19</p>	 <p>There are three children in front of me and another three children behind me. Alec is in front of me and there are another 2 children in front of him.</p>	 <p>How many children are there behind Alec?</p>	 <p>....</p>
<p>20</p>	 <p>I have 2 red roses and 3 white roses.</p>	 <p>At least how many roses should I pick without looking, in order to make sure I will pick roses of both colors?</p>	 <p>....</p>