



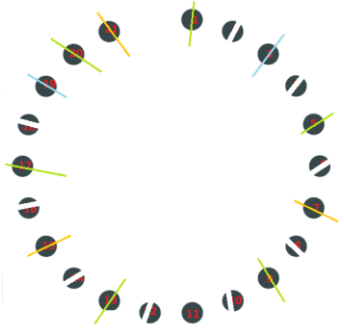
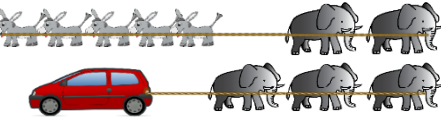
First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_ Grade: \_\_\_\_\_

Teacher: \_\_\_\_\_ Parent's email: \_\_\_\_\_

## Mixed Problems

**Kinder & First Grade: solve at least 3 problems.**  
**Second & Third Grade: solve at least 7 problems.**  
**Fourth Grade and above: solve at least 12 problems.**

		<i>Answer</i>																				
1.	_____, _____, _____ <i>First                  Second                  Third</i>	<i>Car, Van, Truck</i>																				
2.	$3+4+9 = 16$	<i>16</i>																				
3.	Sarah has 8 coins; Tom has 4 coins; Raina has 3 + 4 or 7 coins. In total, they have $8 + 4 + 7 = 19$ coins	<i>19 [coins]</i>																				
4.		<i>7</i>																				
5.	$8 - 3 + 11 = 16$	<i>16 [tubes]</i>																				
6.	The month of June has 30 days. July 1 and July 8 must be a Friday. So, July 10 must be a Sunday.	<i>Sunday</i>																				
7.	You can count up by 13 without going over 100. Another way: $100\text{¢} \div 13 = 7\text{R}9$ . You can buy 7 pencils.	<i>7 [pencils]</i>																				
8.	5 shows a week (2 daytimes, 3 evening). $30 \div 5 \times 2 = 12$ daytime shows	<i>12 [daytime shows]</i>																				
9.	$3 + 8 - 9 + 13 - 4 + 14 = 25$	<i>25 [floors]</i>																				
10.	After 13 days, the frog has climbed 26 ft. On the 14th day, it climbs 4 feet and is now at 30 ft.	<i>14<sup>th</sup> [day]</i>																				
11.	To find the number of minutes per cut, divide the 24 minutes by 2, because it takes 2 cuts to cut a log into 3 pieces (12 minutes each). 7 cuts are needed to cut a log into 8 pieces. Therefore, it takes $7 \times 12 = 84$ minutes to cut another similar log into 8 pieces.	<i>84 [minutes]</i>																				
12.	One way to solve: we can make a table to work on some guesses and checks. <table border="1" style="margin-left: 20px;"> <thead> <tr> <th># of chairs</th> <th># of legs <math>\times 4</math></th> <th># of stools</th> <th># of legs <math>\times 3</math></th> <th>Total legs used</th> </tr> </thead> <tbody> <tr> <td>14</td> <td>56</td> <td>14</td> <td>42</td> <td>98</td> </tr> <tr> <td>15</td> <td>60</td> <td>13</td> <td>39</td> <td>99</td> </tr> <tr> <td>16</td> <td>64</td> <td>12</td> <td>36</td> <td>100</td> </tr> </tbody> </table> <p>There is another way to do it. The difference between the number of legs between the chair and stool is 1. Let's pretend that all 28 seats are made to stools. Then there will be <math>28 \times 3 = 84</math> legs used, but it is 16 legs less than we need. Now let's trade a stool for a chair. Because the difference of the legs is 1, <math>16 \div 1 = 16</math> chairs and 12 stools in total.</p>	# of chairs	# of legs $\times 4$	# of stools	# of legs $\times 3$	Total legs used	14	56	14	42	98	15	60	13	39	99	16	64	12	36	100	<i>16 [chairs]</i>
# of chairs	# of legs $\times 4$	# of stools	# of legs $\times 3$	Total legs used																		
14	56	14	42	98																		
15	60	13	39	99																		
16	64	12	36	100																		

13.	We can reason proportionally that if 3 zebras eat 25 pounds of hay in three days, then 12 zebras will need 100 pounds in three days. Thirty days is ten groups of three and so 10 x 100 or 1000 pounds of hay are needed.	1000 [pounds]	
14.	The 14 players on each team shake hands with players on the opposing team only, not with their own team members. Each player from team 1 shakes 14 hands from team 2, and so do the other 13 players in his team. $14 \times 14 = 196$ handshakes	196 [handshakes]	
15.	The first round eliminates those in chairs 2, 4, 6, 8, 10, 12, 14, 16, 18, 20. The second round eliminates those in chairs 1, 5, 9, 13, 17, 21. The third round eliminates those in chairs 7 and 15. The fourth round eliminates 3 and 19, leaving chair 11 with the grand prize winner! Or draw the round table with the numbers and start act it out.		11 <sup>th</sup> [chair]
16.	<p>One way to solve it:</p> <p>Team 1 = a car and 3 donkeys (<math>c + d + d + d</math>) and Team 2 = 4 elephants (<math>e + e + e + e</math>). If we replace Team 1's car with 3 elephants, we get: Team 1 = <math>e + e + e + d + d + d</math> and team 2 = <math>e + e + e + e</math> If we trade every 2 elephants for 5 donkeys, then we get: Team 1 = <math>(d + d + d + d + d) + (d + d + \text{half } d) + d + d + d = 10</math> and a half donkeys. Team 2 = <math>(d + d + d + d + d) + (d + d + d + d + d) = 10</math> donkeys. So, team 1 which has a car and 3 donkeys (or <math>10 \frac{1}{2}</math> donkey) is stronger and will win. Another way to solve: team 1 = <math>e + e + e + d + d + d</math> and team 2 = <math>e + e + e + e</math> If we trade every two elephants for 5 donkeys, then we will have: Team 1 = <math>(d + d + d + d + d) + e + d + d + d</math> Team 2 = <math>(d + d + d + d + d) + (d + d + d + d + d)</math>. After 8 donkeys are removed from each team, we are left with: Team 1 = 1 elephant and team 2 = 2 donkeys. Since 5 donkeys = 2 elephants, then 1 elephant = 2.5 donkeys. Which means team 1 (2.5 donkeys) is stronger than team 2 (2 donkeys) Another way to solve: Team 1: <math>c + d + d + d</math>. If we trade a car for 3 elephants, we have <math>e + e + e + d + d + d</math> Team 2: <math>e + e + e + e</math> If we ask three elephants to leave from each team, we now have Team 1 with 3 donkeys and Team 2 with 1 elephant. Since 1 elephant = <math>2 \frac{1}{2}</math> donkeys (because 2 elephants = 5 donkeys), team 1 win (with 3 donkeys).</p>		A car and 3 donkeys
17.	857 divided by 6 is just a bit less than 143 so we can try with 143 as the middle position. The sum $140 + 141 + 142 + 143 + 144 + 145 + 146 = 1001$ and $1001 - 857 = 144$ , one of the seven original numbers that was erased. It works! Others don't! For example, $141 + 142 + 143 + 144 + 145 + 146 + 147 = 1008$ and $1008 - 857 = 151$ , but 151 is not in that list!	1001	
18.	$\frac{3}{8} = \frac{9}{24}$ of a tank at first $\frac{2}{3} = \frac{16}{24}$ after adding 7 gallons of gas, thus 7 gallons fill $\frac{7}{24}$ of a tank. Tank has capacity of 24 gallons. To fill the tank to the brim one needs additional 8 gallons of gas ( $24 - 16 = 8$ gal).	8 [gallons]	