

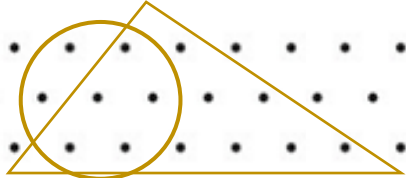


First Name: _____ Last Name: _____ Grade: _____
 Teacher: _____ Parent's email: _____

Mixed Problem Solving

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.

Answer

<p>1. How many dots are outside the circle but inside the triangle?</p> 	7						
<p>2. The answer to each of the following addition problems is on the back of each card. How many of the following 6 cards have the number 9 on the back?</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin: 5px;">2+2+4</div> <div style="border: 1px solid black; padding: 5px; margin: 5px;">3+4+2 ✓</div> <div style="border: 1px solid black; padding: 5px; margin: 5px;">1+2+6 ✓</div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;"> <div style="border: 1px solid black; padding: 5px; margin: 5px;">3+2+3</div> <div style="border: 1px solid black; padding: 5px; margin: 5px;">1+3+5 ✓</div> <div style="border: 1px solid black; padding: 5px; margin: 5px;">4+1+4 ✓</div> </div>	4						
<p>3. Tamara is sorting number cards into 3 boxes as shown below. How many total number cards do not belong to any of the boxes?</p> <div style="display: flex; justify-content: space-around; align-items: center; margin-bottom: 10px;"> <div style="border: 1px solid black; padding: 5px; margin: 5px;">36</div> <div style="border: 1px solid black; padding: 5px; margin: 5px;">12</div> <div style="border: 1px solid black; padding: 5px; margin: 5px;">41</div> <div style="border: 1px solid black; padding: 5px; margin: 5px;">53</div> <div style="border: 1px solid black; padding: 5px; margin: 5px;">26</div> <div style="border: 1px solid black; padding: 5px; margin: 5px;">31</div> <div style="border: 1px solid black; padding: 5px; margin: 5px;">47</div> <div style="border: 1px solid black; padding: 5px; margin: 5px;">21</div> <div style="border: 1px solid black; padding: 5px; margin: 5px;">62</div> <div style="border: 1px solid black; padding: 5px; margin: 5px;">19</div> <div style="border: 1px solid black; padding: 5px; margin: 5px;">38</div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-bottom: 10px;"> <div style="border: 1px solid black; padding: 10px; width: 25%; text-align: center;"> <p>A</p> <p><i>Numbers that are odd and less than 20</i></p> </div> <div style="border: 1px solid black; padding: 10px; width: 25%; text-align: center;"> <p>B</p> <p><i>Numbers that are greater than 20 but less than 45</i></p> </div> <div style="border: 1px solid black; padding: 10px; width: 25%; text-align: center;"> <p>C</p> <p><i>Numbers that are even and greater than 45</i></p> </div> </div> <p>Number that do not belong to any of the boxes: 12, 53, 47 (three numbers).</p>	3 [numbers]						
<p>4. 3 boxes of 6 stuffed animals = 18. 1 box of 12 stuffed animals = 12. Altogether: 18 + 12 = 30 stuffed animals.</p>	30 [stuffed animals]						
<p>5. Notice that the pattern is for every 2 dumplings Francine eats, Kevin eats 3 dumplings.</p> <table border="1" style="margin-left: 20px; margin-top: 10px;"> <tbody> <tr> <td>Francine</td> <td>2</td> <td>2+2+2+2 = 8</td> </tr> <tr> <td>Kevin</td> <td>3</td> <td>3+3+3+3 = 12</td> </tr> </tbody> </table>	Francine	2	2+2+2+2 = 8	Kevin	3	3+3+3+3 = 12	12 [dumplings]
Francine	2	2+2+2+2 = 8					
Kevin	3	3+3+3+3 = 12					
<p>6. She spent: \$8 + \$5 + \$36 = \$49. Before her spending, she had: \$49 + \$7 = \$56.</p>	\$56 or \$56.00						

7. Draw a model.

Distance in books: 6 books – 5 books = 1 book
 1 book: \$3.50 + \$4.00 = **\$7.50**

\$7.50

8. Increase in the price: $\$7.50 - \$5.25 = \$2.25$. Since it will increase by $\$0.25$ per year, and there are 9 of $\$0.25$ in $\$2.25$, then it will be $2023 + 9 = \mathbf{2032}$.

2032

9. Cake

	\$88
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 } \$100.00
 Delivery fee

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The cost of delivery fee: $(100 - 88) \div 2 = \mathbf{\$6}$. Cost of the cake: $\$100 - \$6 = \$94$.
 Let's check:
 Cost of cake + delivery = \$100. $\$94 + \$6 = 100$. ✓
 The cake cost \$88 more than the delivery: $\$94 - \$6 = \$88$. ✓

\$6

10. *Note: Consecutive numbers are numbers that follow each other in order.*
 The houses will be numbered: 1052, 1054, 1056, 1058, ..., 1084, 1086, 1088.
 If we subtract each number by 1050, we will have: 2, 4, 6, 8, ..., 34, 36, 38.
 If we divide each number by 2, we will have: 1, 2, 3, 4, ..., 17, 18, 19
→ 19 numbers
 Or another way: $(88 - 52) \div 2 + 1 = 19$

19

11.

Wesley	4	4+4+4+4 = 16
Kathy	5	5+5+5+5 = 20

 } $16+20 = \mathbf{36}$

36 [panels]

12. On the first day the difference between their laps is $6 - 1 = 5$ laps. This difference will not change as the girls would run only one lap each day after. So, to get to the point when Rochelle has run twice as far as Regina, they will be doing 10 laps (Rochelle) and 5 laps (Regina). On the first day Regina ran 1 lap, so in **4 days** the statement will become true.

4 [days]

13.

	Amina	Beatrice	Cadence
At the end:	20	20	20
	16	20	24
	16	30	14
At the beginning:	28	18	14

*Amina: 28 [coins]
 Beatrice: 18 [coins]
 Cadence: 14 [coins]*


14.

Solve backwards:
 The final square was 2.5 by 2.5 cm, the rectangle on the step before the last fold was 5 by 2.5 cm; the rectangle after the first fold was a square 5 by 5 cm; the original rectangle was 10 by 5 cm.
 So, the area of the piece he started from was $10 \times 5 = \mathbf{50 \text{ cm}^2}$

50 [cm²]

15. The 5 by 4 by 3 rectangular prism should have $5 \times 4 \times 3$ or 60 cubes.
 The given spae has two layers $5 \times 4 \times 2 = 40$ and 9 more facing us. So, $60 - 49 = \mathbf{11 \text{ more cubes are needed}}$

11 [more cubes]

<p>16. 13 and 19 are prime numbers, so if we have a leftover after dividing the soldiers into rows, it means the number of men in brigade is not divisible by $13 \times 19 = 247$. $1000 \div 247 = 4$ R12. The number that we are looking for is between $4 \times 247 = 988$ and $5 \times 247 = 1235$. Now let's write multiples of 13 plus remainder of 4: 17, 30, 43, 56, 69, 82, 95, 108, 121, 134, 147, ... And multiples of 19 plus remainder of 1: 20, 39, 58, 77, 96, 115, 134, 153, 172, 191, 210, 229, ... So, 134 will have remainder of 4, when divided by 13 and remainder of 1 when divided by 19. $988 + 134 = 1122$ is the smallest number of men in a brigade of more than 1000.</p>	<p>1122</p>
<p>17. $\frac{2}{3} - \frac{3}{8} = \frac{16}{24} - \frac{9}{24} = \frac{7}{24}$ so, the tank holds 24 gallons and one-third of that is 8 gallons.</p> 	<p>8 [gallons]</p>
<p>18. We must find a 5-digit number that works with the clues. To get it as the smallest number, we can have 2 on the ten thousand's place and 0 on one thousand's place. We have still 3 digits left 5, 3, and 7. Because we want to get the number as the smallest one. Let's try to check these combinations, starting from the first one (they are ordered from least to greatest): 20357, 20375, 20537, 20573, 20735, 20753. $20357 \div 11 = 1850$ R7 doesn't work $20375 \div 11 = 1852$ R3 $20537 \div 11 = 1867$ works. So, our 5-digit number is 20537 with 5 on the hundred's place.</p>	<p>5</p>