

Name _____



TEST # **1**

January 2017 Rookie Level

1) I am a 2-digit number. The sum of my digits is 12. The tens digit is three times as much as the ones digit. What number am I?

2) The auditorium has 450 seats. The 10 rows in front have 9 seats each. The rest of the rows have 15 seats each. How many rows have 15 seats?

3) Lisa and Katie counted the money that each had made from babysitting. Lisa said, "If I give you \$10 we will have the same amount. If you give me \$10, I will have 3 times as much as you." How much money does Lisa have?

4) In this magic square, the numbers 1 through 9 can be placed in the squares so that each row and column and diagonal add up to 15. What number goes in the top middle box?

		6
9		
		8

5) Matthew has \$120. He plans to spend 10% of it on baseball cards and another 10% on socks. How much money will he have left?

6) Emma has a box containing between 10 and 50 beads. If she counts them 2 at a time, she has one left over. If she counts them out 5 at a time she has 4 left over. If she counts them out 8 at a time she has 7 left over. How many beads does she have?

January 2017 Rookie Level Answers

1) I am a 2-digit number. The sum of my digits is 12. The tens digit is three times as much as the ones digit. What number am I?

93

2) The auditorium has 450 seats. The 10 rows in front have 9 seats each. The rest of the rows have 15 seats each. How many rows have 15 seats?

24

3) Lisa and Katie counted the money that each had made from babysitting. Lisa said, "If I give you \$10 we will have the same amount. If you give me \$10, I will have 3 times as much as you." How much money does Lisa have?

50

4) In this magic square, the numbers 1 through 9 can be placed in the squares so that each row and column and diagonal add up to 15. What number goes in the top middle box?

		6
9		
		8

7

5) Matthew has \$120. He plans to spend 10% of it on baseball cards and another 10% on socks. How much money will he have left?

96

6) Emma has a box containing between 10 and 50 beads. If she counts them 2 at a time, she has one left over. If she counts them out 5 at a time she has 4 left over. If she counts them out 8 at a time she has 7 left over. How many beads does she have?

39

January 2017 Rookie Level Solutions

1) To find a two-digit number whose sum of its digits is 12 and the tens digit is three times as much as the ones digit, you will need to list out numbers whose digits add to 12: 39, 48, 57, 66, 75, 84, 93. The answer is 93 because the tens digit is three times the ones digit.

93

2) The auditorium has 450 seats. The 10 rows in front have 9 seats each. The rest of the rows have 15 seats each. To solve for how many rows have 15 seats find the product of the first 10 rows and subtract it from the 450 seats. Then divide that amount by 15. $10 \times 9 = 90$ seats in the front. $450 - 90 = 360$ seats. Now divide 360 by 15 and there are 24 rows that have 15 seats in each row.

24

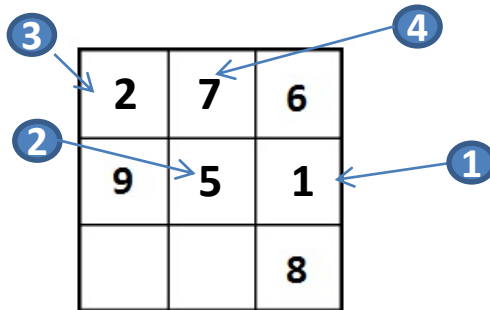
3) Lisa said, "If I give you \$10 we will have the same amount. If you give me \$10, I will have 3 times as much as you." To solve for how much money Lisa has make a chart. Lisa has \$50 because she and Katie will have the same amount if she gives Katie \$10 and she will have three times Katie's amount if Katie gives her \$10.

Lisa	Katie	Lisa - \$10	Katie + \$10	Lisa + \$10	Katie - \$10
\$20	\$10	\$10	\$20	\$30	0
\$30	\$10	\$20	\$20	\$40	0
\$40	\$20	\$30	\$30	\$50	\$10
\$50	\$30	\$40	\$40	\$60	\$20

50

January 2017 Rookie Level Solutions

4) Since the numbers 1 through 9 can be placed in the squares so that each row and column and diagonal add up to 15. We can start solving for the unknowns to discover the number in the top middle box. First solve for the box between 6 and 8- it must be 1 so that the column equals 15. Next you can solve for the center box which must be 5. Now you can move to the top left corner and solve for the diagonal- this must be 2 since the diagonal sum is $8 + 5 + 2 = 15$. Finally you can solve for the top middle box- It is $2 + ? + 6$. It is 7.


7

5) Matthew has \$120. He plans to spend 10% of it on baseball cards and another 10% on socks. To find out how much money will he have left first solve for what 20% of \$120 is. Ten percent of \$120 is \$12 so twenty percent is \$24. Now subtract this from the original amount $\$120 - \$24 = \$96$.

96

6) Make a chart to find the first number that meets the requirements. The number is between 10 and 50 beads. If she counts them 2 at a time, she has one left over. This means her beads are divisible by 3. If she counts them out 5 at a time she has 4 left over. Start at 14 and count by 5. If she counts them out 8 at a time she has 7 left over. Start counting at 15 and count by 8. The number that is between 10 and 50 and that meets all three counting requirements is 39. She has 39 beads.

Counts by 2 with 1 left over	15	18	21	24	27	30	33	36	39
Counts by 5 with 4 left over	14	19	24	29	34	39			
Counts by 8 with 7 left over	15	23	31	39					

39