Name _____

1)

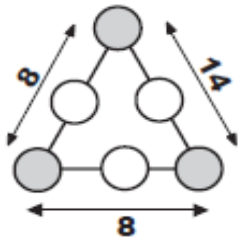
Five students sit around a circular table. Their chairs are numbered in order from 1 through 5. Abby sits next to both Ben and Colin. Dalia sits next to both Ben and Sarah. The numbers on Abby's and Colin's chairs add up to 6. Who sits in chair number 3?

2)

Suppose we call a number *funny* if it is the product of three prime factors, of which exactly two are the same. (For example: 12 = 2 x 2 x 3, so 12 is *funny*.) What is the total number of *funny* numbers between 30 and 60?

3)

Each of the 6 circles contains a different counting number. The sum of the 6 numbers is 21. The sum of the 3 numbers along each side of the triangle is shown in the diagram. What is the sum of the numbers in the shaded circles?

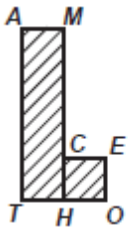


4)

The digits of a four-digit number are 1, 3, 6, and 9, but not necessarily in that order. The thousands digit is prime. The hundreds digit is 3 more than the tens digit. What is the number?

5)

The area of rectangle *MATH* is 30 sq cm and each side-length is a counting number of cm. *H* is the midpoint of $\overline{TO}$. The area of square *ECHO* is between 5 sq cm and 24 sq cm. Find the perimeter of the entire figure, in cm.



6)

Sequence *A* counts down from 46 by 7: 46, 39, 32, and so on. Sequence *B* counts down from one number (not 46) by another number (not 7). In sequence *B*, the second number is 35, the sixth number is 23, and the sequence ends with the first single-digit number that it comes to. How many numbers are in sequence *B*?

7)

Amy, Brett, and Cate each secretly write down **Z**, **U**, or **T**. What is the probability that Cate's letter is different from both Amy's letter and Brett's letter?

8)

In an election, Ethan got 5 fewer votes than Christopher, who got 3 votes more than Olivia, who got 4 fewer votes than Ava. How many more votes did Ava get than Ethan?

9)

Jan and Nika ride their bikes. Jan rides at 5 miles per hour for 1 hour and then rides at 10 miles per hour for 30 minutes. Nika rides at a constant 8 miles per hour. The trips cover the same distance. For how many minutes does Nika ride?

10)

Aidan writes the counting numbers in order. In Row 1, he writes the first number. In Row 2 he writes the next two numbers, and so on as shown. What is the thirteenth number in Row 16?

Row 1: 1
Row 2: 2 3
Row 3: 4 5 6
... and so on