

Orange County Math Circle

All-Girls Math Tournament

5th-6th Target Round

1. The area of a square 12.25 in^2 . What is the perimeter?
2. Bessie has 7 friends who are either cows or chickens. In total, her friends have 22 legs. How many of Bessie's friends are cows?
3. Adam uses sticky notes to remind him to do his homework. He uses 1 sticky note on the first day of school, 2 sticky notes on the second day of school, and so on, using twice as many sticky notes each day. How many sticky notes does he use in total by the end of the sixth day of school?
4. Tom and Laura have a total of 17 apples. The number of apples that Tom has is divisible by 4. The number of apples that Laura has is divisible by 3. How many apples does Laura have?
5. The perimeter of a regular pentagon is equivalent to the perimeter of an equilateral triangle. If the side length of the pentagon is 6, what is the side length of the triangle?
6. A "holey number" is defined as a whole number whose digits consist only of 0, 4, 6, 8, and 9 (digits may be repeated). How many 3-digit holey numbers are there?
7. Anne the Ant is walking on a line. Each second, she flips a coin. If it lands heads up, she walks a step forwards. Otherwise, she stays where she is. What is the probability that, after 6 seconds, she is exactly 3 steps away from where she started? Express your answer as a common fraction.
8. A six-sided die is weighted so that each odd number is equally likely, and each even number is equally likely as well. If the expected value of one roll is $3\frac{2}{3}$, what is the probability of rolling a one?