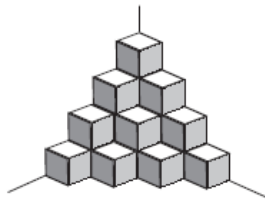


Math Olympiad Beginner Homework 4

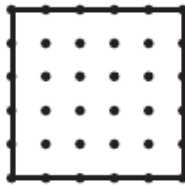
Name _____

1. If a three-digit number is divided by 5 or by 6, the remainder is 1 in each case. What is the least such three-digit number? [121]
2. Abby lists four consecutive multiples of some number. The average of the first two multiples is 28 and the average of the last two is 44. What is the greatest multiple on Abby's list? [48]
3. Emma has \$1.85 in her pocket, all in quarters and nickels. Her father gives her another quarter. She now has the same number of quarters as nickels. How many nickels does Emma have in all? [7]
4. Tony has an 8 cm by 12 cm paper rectangle. He folds it in half three times, each time making a smaller rectangle. What is the least possible perimeter of the rectangle after the third fold, in cm? [14]
5. The only way that 10 can be written as the sum of 4 different counting numbers is $1 + 2 + 3 + 4$. In how many different ways can 15 be written as the sum of 4 different counting numbers? Assume that order does not matter. [6]
6. The tower shown is made of congruent cubes stacked on top of each other. Some of the cubes are not visible. How many cubes in all are used to form the tower? [20]



7. A prime number is a counting number with exactly two factors, the number itself and the number 1. In the sequence 2, 5, 11, 23, ..., each number is obtained by doubling the previous number and adding 1. What is the first number in the sequence that is *not* a prime number? [95]

8. Five standard dice are rolled on a flat surface and the numbers on the top faces are totaled. How many different totals are possible? (*Standard dice have 6 faces, each showing a different number from 1 through 6.*) [26]
9. *Joshua writes a four-digit number whose digits are 3, 5, 7, and 9, not necessarily in that order. The number is a multiple of 5. The first two digits and the last two digits have the same sum. The thousands digit is larger than the hundreds digit. What is Joshua's number?* [9375]
10. Mr. Wright wants to tile a 5 ft by 5 ft square floor. He has three kinds of square tiles: 1 ft by 1 ft, 2 ft by 2 ft, and 3 ft by 3 ft. Tiles may not overlap or be cut. What is the fewest tiles Mr. Wright may use to completely cover his floor? [8]



11. Allie has half as much money as Ben. Ben has \$3 more than Emma. Emma has 5 times as much money as Shauna. Shauna has \$1. How much money do Allie and Ben have together? [12]
12. Following only the paths shown, what is the number of different paths that go from A to B to C to D and touch each of those points exactly once? [12]

