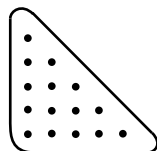


Counting

1. Bicycle license plates in Flatville each contain three letters. The first is chosen from the set $\{C, H, L, P, R\}$, the second from $\{A, I, O\}$, and the third from $\{D, M, N, T\}$. When Flatville needed more license plates, they added two more letters. The new letters may be added to one set, or one letter may be added to one, and one to another set. What is the largest possible number of *additional* license plates that can be made by adding two letters?

(A) 24 (B) 30 (C) 36 (D) 40 (E) 60

2. There are 5 yellow pegs, 4 red pegs, 3 green pegs, 2 blue pegs, and 1 orange peg to be placed on a triangle peg board. In how many ways can the pegs be placed so that no (horizontal) row or (vertical) column contains two pegs of the same color?



(A) 0 (B) 1 (C) $5!4!3!2!$ (D) $\frac{15!}{5!4!3!2!}$ (E) 15!

3. Pat wants to buy four donuts from an ample supply of three types of donuts: glazed, chocolate, and powdered. How many different selections are possible?

(A) 6 (B) 9 (C) 12 (D) 15 (E) 18

4. How many different combinations of \$5 and \$2 bills can be used to make a total of \$17? Order does not matter in this problem.

(A) 2 (B) 3 (C) 4 (D) 5 (E) 6

5. A set of tiles numbered 1 through 100 is modified repeatedly by the following operation: remove all tiles numbered with a perfect square, and renumber the remaining tiles consecutively starting with 1. How many times must the operation be performed to reduce the number of tiles in the set to one?

(A) 10 (B) 11 (C) 18 (D) 19 (E) 20

6. Using the letters A, M, O, S, and U, we can form 120 five letter “words.” If these “words” are arranged in alphabetical order, then the “word” USAMO occupies position

(A) 112 (B) 113 (C) 114 (D) 115 (E) 116

7. Ali, Bonnie, Carlo, and Dianna are going to drive together to a nearby theme park. The car they are using has four seats: one driver’s seat, one front passenger seat, and two back seats. Bonnie and Carlo are the only two who can drive the car. How many possible seating arrangements are there?

(A) 2 (B) 4 (C) 6 (D) 12 (E) 24