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Po Leung Kuk

4th Primary Mathematics World Contest

Team Contest

English Version



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GROUP CONTEST

1. A box contains 4,000 to 6,000 candies. When the candies are evenly distributed to 5, 6, 7, 8, or 9 children, there is always one candy left. If the candies are packaged into small bags each having the same number of candies, what is the largest number of candies below 4,000 in each bag so that no candies are left?

Answer : _____



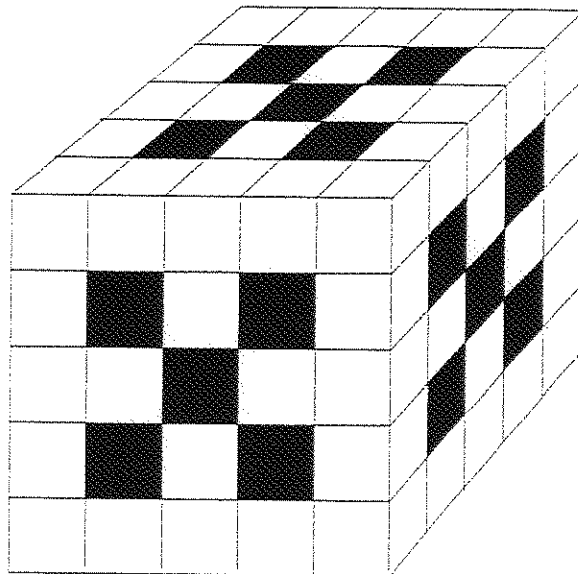


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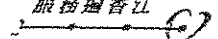
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GROUP CONTEST

2. A $5 \times 5 \times 5$ cube is formed $1 \times 1 \times 1$ cubes. A number of the smaller cubes are removed by punching out the 15 designated columns from front to back, top to bottom, and side to side. Find the number of smaller cubes that remain.



Answer : _____



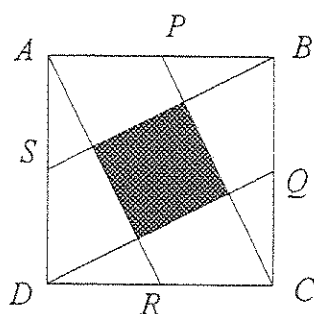


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3. In the figure, ABCD is a square. P, Q, R and S are mid-points of the sides AB, BC, CD and DA respectively. Find the ratio of the shaded area to the area of the square ABCD.



Answer : _____

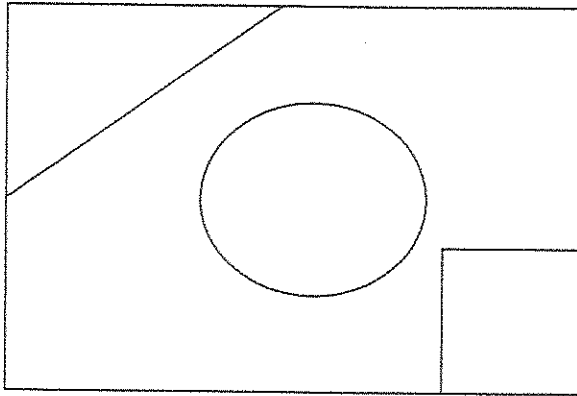


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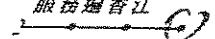
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GROUP CONTEST

4. Use the four colours red, yellow, blue and green to fill in the regions of the following diagram so that adjacent regions are not the same colour. How many different ways are there to colour the regions?



Answer : _____





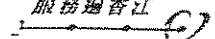
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5. Each of 20 children ranked 3 kinds of chocolate (A, B, and C) in order of their preferences, with no abstentions. Suppose 11 children preferred B to C, 14 preferred C to A, and 12 preferred A to B, and all possible orders of A, B, and C existed. Find the number of children who ranked A as their first preference.

Answer : _____



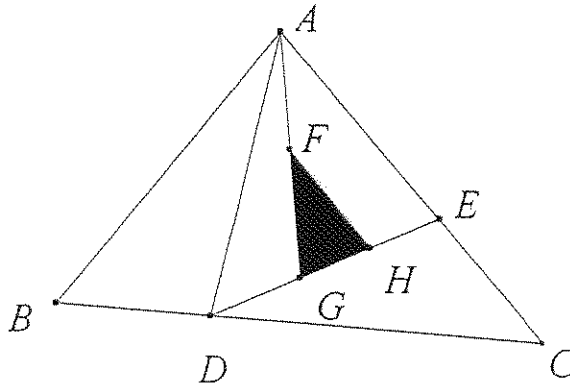


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6. In $\triangle ABC$, $BC = 6BD$, $AC = 5EC$, $DG = GH = HE$, $AF = FG$.
Find the ratio of the area of $\triangle FGH$ to the area of $\triangle ABC$.



Answer : _____





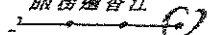
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7. The digits 0 to 9 without repetition form two 5-digit numbers M and N . Given that $\frac{M}{N}$ equals to $\frac{1}{2}$, find the largest possible sum of M and N .

Answer : _____





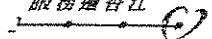
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8. There are positive integers k, n, m such that $\frac{19}{20} < \frac{1}{k} + \frac{1}{n} + \frac{1}{m} < 1$. What is the smallest possible value of $k + n + m$?

Answer : _____



PO LEUNG KOK Mathematics Competition 2000
GROUP ITEMS

Questions	Answer	Remark
1	71	
2	68	
3	1:5	
4	108	
5	5	
6	1:9	
7	145953	
8	12	
9	Bowling: A Tennis: P	
10	14	