

2008 AMC8**Problem 1**

Susan had \$50 to spend at the carnival. She spent \$12 on food and twice as much on rides. How many dollars did she have left to spend?

苏珊在嘉年华会上有 50 美元可以消费。她在食物上花了 12 美元，在乘车上花了两倍的钱。她还剩多少美元可以花？

- (A) 12 (B) 14 (C) 26 (D) 38 (E) 50

Problem 2

The ten-letter code BEST OF LUCK represents the ten digits 0 — 9, in order. What 4-digit number is represented by the code word CLUE?

十个字母的代码 BEST OF LUCK 按顺序依次表示 0—9 这十个数字。代码字 CLUE 代表的 4 位数是什么？

- (A) 8671 (B) 8672 (C) 9781 (D) 9782 (E) 9872

Problem 3

If February is a month that contains Friday the 13th, what day of the week is February 1?

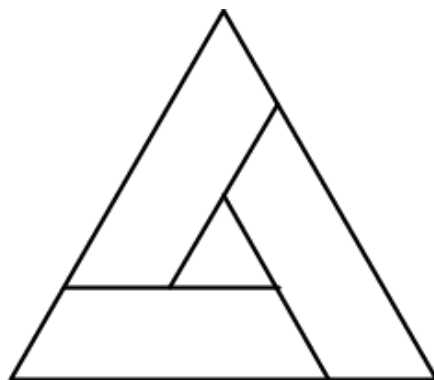
如果 2 月 13 号是周五，那么 2 月 1 号是周几？

- (A) Sunday (B) Monday (C) Wednesday (D) Thursday (E) Saturday

Problem 4

In the figure, the outer equilateral triangle has area 16, the inner equilateral triangle has area 1, and the three trapezoids are congruent. What is the area of one of the trapezoids?

下图所示的四形中，外层等边三角形的面积为 16，内部边三角形的面积为 1，三个梯形都是全等的，那么其中一个梯形的面积是多少？



- (A) 3 (B) 4 (C) 5 (D) 6 (E) 7

Problem 5

Barney Schwinn notices that the odometer on his bicycle reads 1441, a palindrome, because it reads the same forward and backward. After riding 4 more hours that day and 6 the next, he notices that the odometer shows another palindrome, 1661. What was his average speed in miles per hour?

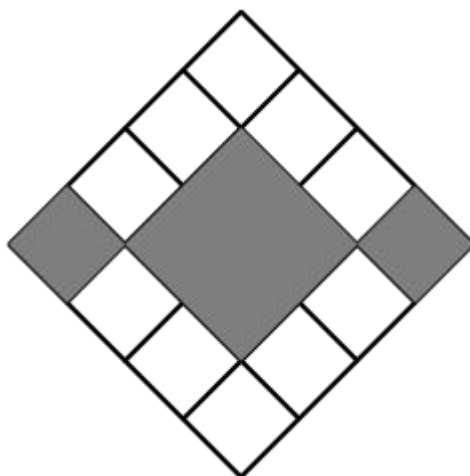
Barney Schwinn 注意到他自行车上的里程表读数为 1441，这是个回环数，因为它从前向后读和从后向前读读数都相同。那天又继续骑了 4 小时和第二天骑了 6 小时后，他注意到里程表显示了另一个回环数 1661。他的平均时速是多少英里每小时？

- (A) 15 (B) 16 (C) 18 (D) 20 (E) 22

Problem 6

In the figure, what is the ratio of the area of the gray squares to the area of the white squares?

如下图所示，灰色正方形的面积和白色正方形的面积的比值是多少？



- (A) 3 : 10 (B) 3 : 8 (C) 3 : 7 (D) 3 : 5 (E) 1 : 1

Problem 7

If $\frac{3}{5} = \frac{M}{45} = \frac{60}{N}$, what is $M + N$?

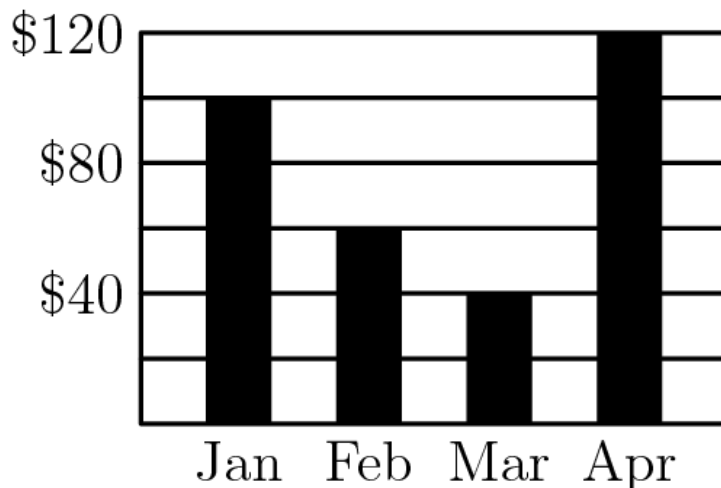
如果 $\frac{3}{5} = \frac{M}{45} = \frac{60}{N}$, 那么 $M + N$ 是多少?

- (A) 27 (B) 29 (C) 45 (D) 105 (E) 127

Problem 8

Candy sales from the Boosters Club from January through April are shown. What were the average sales per month in dollars?

下图显示了 Boosters 俱乐部从 1 月到 4 月的糖果销售情况。每月的平均销售额是多少美元？



- (A) 60 (B) 70 (C) 75 (D) 80 (E) 85

Problem 9

In 2005 Tycoon Tammy invested \$100 for two years. During the first year her investment suffered a 15% loss, but during the second year the remaining investment showed a 20% gain. Over the two-year period, what was the change in Tammy's investment?

2005 年大亨塔米投资了 100 美元，投资时长为两年。在第一年，她的投资遭受了 15% 的损失，但在第二年，剩余的投资获得了 20% 的收益。则在这两年的时间里，塔米的投资发生了什么变化？

- (A) 5% loss | 5% 的损失
- (B) 2% loss | 2% 的损失
- (C) 1% gain | 1% 的收益
- (D) 2% gain | 2% 的收益
- (E) 5% gain | 5% 的收益

Problem 10

The average age of the 6 people in Room A is 40. The average age of the 4 people in Room B is 25. If the two groups are combined, what is the average age of all the people?

A 房间里 6 个人的平均年龄是 40 岁。B 房间里 4 个人的平均年龄是 25 岁。如果把这两组人合起来，那么所有人的平均年龄是多少？

- (A) 32.5 (B) 33 (C) 33.5 (D) 34 (E) 35

Problem 11

Each of the 39 students in the eighth grade at Lincoln Middle School has one dog or one cat or both a dog and a cat. Twenty students have a dog and 26 students have a cat. How many students have both a dog and a cat?

林肯中学八年级总共有 39 名学生，每名学生都有一条狗，或者一只猫，或者两者兼具。已知有 20 名学生有狗，有 26 名学生有猫。那么有多少名学生既有猫又有狗？

- (A) 7 (B) 13 (C) 19 (D) 39 (E) 46

Problem 12

A ball is dropped from a height of 3 meters. On its first bounce it rises to a height of 2 meters. It keeps falling and bouncing to $\frac{2}{3}$ of the height it reached in the previous bounce. On which bounce will it not rise to a height of 0.5 meters?

一个球从 3 米高处落下。它第一次弹起的高度是 2 米，之后不停地落下和弹起，弹起的高度都是前一次弹起高度的 $\frac{2}{3}$ 。则第几次弹起的高度小于 0.5 米？

- (A) 3 (B) 4 (C) 5 (D) 6 (E) 7

Problem 13

Mr. Harman needs to know the combined weight in pounds of three boxes he wants to mail.

However, the only available scale is not accurate for weights less than 100 pounds or more than 150 pounds. So the boxes are weighed in pairs in every possible way. The results are 122, 125 and 127 pounds. What is the combined weight in pounds of the three boxes?

哈曼太太需要知道他要邮寄的三个箱子的总重量是多少磅。然而，唯一可用的秤对于称量小于 100 磅或大于 150 磅的重物结果并不精确。因此，最后是以两两组合的方式同时称量 2 个箱子，结果是 122，125 和 127 磅。则这三个箱子的总重量是多少磅？

- (A) 160 (B) 170 (C) 187 (D) 195 (E) 354

Problem 14

Three A's, three B's, and three C's are placed in the nine spaces so that each row and column contain one of each letter. If A is placed in the upper left corner, how many arrangements are possible?

把三个 A，三个 B 和三个 C 放置在九个空格中，使得每行和每列包含三个字母中的每一个字母。如果 A 放置在左上角，那么一共有多少种安排方法？

| | | |
|---|--|--|
| A | | |
| | | |
| | | |

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

Problem 15

In Theresa's first 8 basketball games, she scored 7, 4, 3, 6, 8, 3, 1 and 5 points. In her ninth game, she scored fewer than 10 points and her points-per-game average for the nine games was an integer. Similarly in her tenth game, she scored fewer than 10 points and her points-per-game average for the 10 games was also an integer. What is the product of the number of points she scored in the ninth and tenth games?

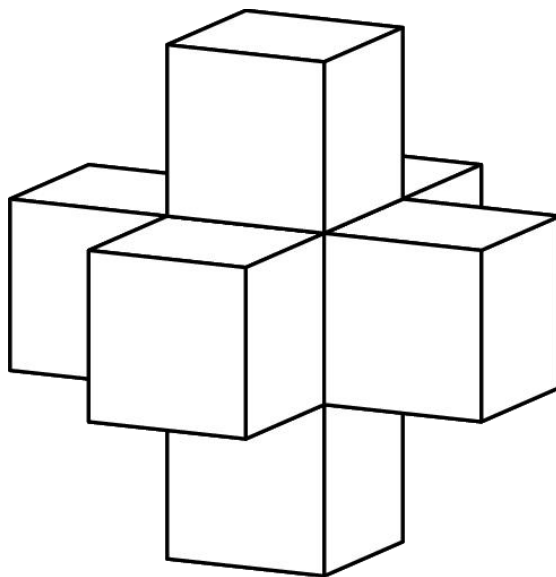
在 Theresa 的前 8 场篮球比赛中，她的进球得分分别是 7, 4, 3, 6, 8, 3, 1 和 5 分。在她的第 9 场比赛中，她的得分少于 10 分，而她在这 9 场比赛中平均每场得分都是整数。同样，在她的第 10 场比赛中，她的得分少于 10 分，而她在这 10 场比赛中平均每场得分也都是整数。那么她在第 9 场和第 10 场比赛中的得分的乘积是多少？

- (A) 35 (B) 40 (C) 48 (D) 56 (E) 72

Problem 16

A shape is created by joining seven unit cubes, as shown. What is the ratio of the volume in cubic units to the surface area in square units?

如图所示，把 7 个单位正方体连接形成如下的立体图形。那么这个立体图形的体积和表面积的比值是多少？



- (A) 1 : 6 (B) 7 : 36 (C) 1 : 5 (D) 7 : 30 (E) 6 : 25

Problem 17

Ms. Osborne asks each student in her class to draw a rectangle with integer side lengths and a perimeter of 50 units. All of her students calculate the area of the rectangle they draw. What is the difference between the largest and smallest possible areas of the rectangles?

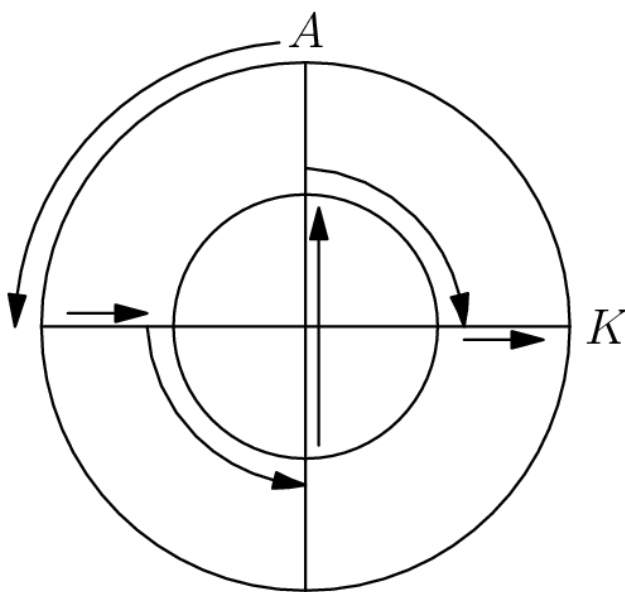
Osborne 女士要求班级里的每一个学生都画一个周长为 50，且每条边长度都是整数的矩形。每个学生都计算了自己所画矩形的面积。那么这些矩形中，最大可能的面积和最小可能的面积的差是多少？

- (A) 76 (B) 120 (C) 128 (D) 132 (E) 136

Problem 18

Two circles that share the same center have radii 10 meters and 20 meters. An aardvark runs along the path shown, starting at A and ending at K . How many meters does the aardvark run?

两个同心圆的半径分别是 10 米和 20 米。一个土豚沿着图示路径运动，从 A 点开始到 K 点结束。则土豚总共运动了多少米？

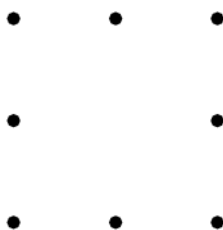


- (A) $10\pi + 20$ (B) $10\pi + 30$ (C) $10\pi + 40$ (D) $20\pi + 20$ (E) $20\pi + 40$

Problem 19

Eight points are spaced around at intervals of one unit around a 2×2 square, as shown. Two of the 8 points are chosen at random. What is the probability that the two points are one unit apart?

如图所示，八个点绕着一个 2×2 的正方形等间距分布，相邻点的距离均为 1 个单位。从这 8 个点中随机选择其中两个点，则这两点相距一个单位的概率是多少？



- (A) $\frac{1}{4}$ (B) $\frac{2}{7}$ (C) $\frac{4}{11}$ (D) $\frac{1}{2}$ (E) $\frac{4}{7}$

Problem 20

The students in Mr. Neatkin's class took a penmanship test. Two-thirds of the boys and $\frac{3}{4}$ of the girls passed the test, and an equal number of boys and girls passed the test. What is the minimum possible number of students in the class?

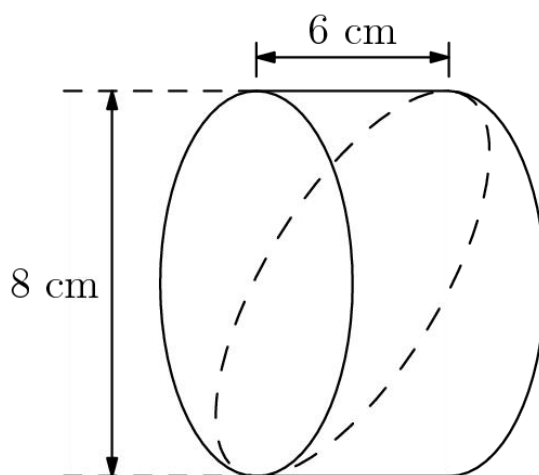
Neatkin 先生班上的学生参加了某个笔试。三分之二的男孩和 $\frac{3}{4}$ 的女孩通过了这个笔试，且通过这个笔试的男孩和女孩个数是一样的。则这个班最少可能是多少个学生？

- (A) 12 (B) 17 (C) 24 (D) 27 (E) 36

Problem 21

Jerry cuts a wedge from a 6-cm cylinder of bologna as shown by the dashed curve. Which answer choice is closest to the volume of his wedge in cubic centimeters?

如图中虚线所示，Jery 从某个 6 厘米长的博洛尼亚圆柱上切下一个楔子。下面哪一个选项的答案最接近他的楔子的体积（单位：立方厘米）？



- (A) 48 (B) 75 (C) 151 (D) 192 (E) 603

Problem 22

For how many positive integer values of n are both $\frac{n}{3}$ and $3n$ three-digit whole numbers?

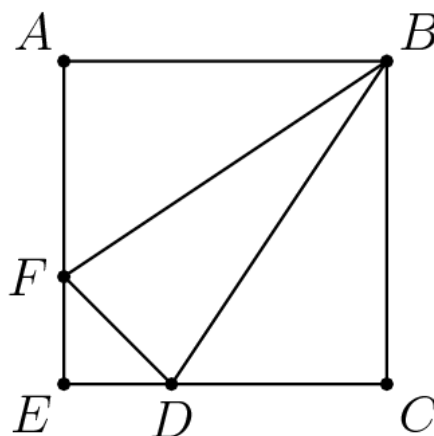
有多少个正整数 n ，使得 $\frac{n}{3}$ 和 $3n$ 都是三位整数？

- (A) 12 (B) 21 (C) 27 (D) 33 (E) 34

Problem 23

In square $ABCE$, $AF = 2FE$ and $CD = 2DE$. What is the ratio of the area of $\triangle BFD$ to the area of square $ABCE$?

在正方形 $ABCE$ 中, $AF=2FE$, $CD=2DE$, 那么 $\triangle BFD$ 的面积和正方形 $ABCE$ 的面积比值是多少?



- (A) $\frac{1}{6}$ (B) $\frac{2}{9}$ (C) $\frac{5}{18}$ (D) $\frac{1}{3}$ (E) $\frac{7}{20}$

Problem 24

Ten tiles numbered 1 through 10 are turned face down. One tile is turned up at random, and a die is rolled. What is the probability that the product of the numbers on the tile and the die will be a square?

编号为 1 至 10 的十块瓷砖面朝下放置着。随机翻开其中一块瓷砖, 然后再掷一枚骰子。则瓷砖和骰子上的数的乘积为完全平方数的概率是多少?

- (A) $\frac{1}{10}$ (B) $\frac{1}{6}$ (C) $\frac{11}{60}$ (D) $\frac{1}{5}$ (E) $\frac{7}{30}$

Problem 25

Margie's winning art design is shown. The smallest circle has radius 2 inches, with each successive circle's radius increasing by 2 inches. Approximately what percent of the design is black?

下图展示了 Margie 获奖的艺术设计作品。最小的圆的半径为 2 英寸，每个连续圆的半径增加 2 英寸。以下哪项最接近黑色图案占整个图案的百分比？



- (A) 42 (B) 44 (C) 45 (D) 46 (E) 48

2008 AMC 8 Answer Key

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|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| B | A | A | C | E | D | E | D | D | D | A | C | C |
| 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | |
| C | B | D | D | E | B | B | C | A | C | C | A | |

2008 AMC 8 Solution



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